

SERVICE Manual

PLASMA DISPLAY TV



NS-P501Q-10A

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1. Precautions and Safety Notices

Prior to using this service manual, please ensure that you have carefully followed all the procedures outlined in the user's manual for this product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

1. Precautions and Safety Notices

11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The mains plug is the disconnecting device. The plug must remain readily operable.
16. The apparatus with grounding-type plug is a class I apparatus. Class I apparatus need to be connected to earth ground wire to prevent possible electric shock. Make sure that you connect the class I apparatus to a mains socket outlet with a protective earthing connection.
17. Remote control batteries should not be exposed to excessive heat such as sunshine, fire, or the like.
18. The apparatus shall not be exposed to dripping or splashing, and no objects filled with liquids, such as vases, shall be placed on the apparatus.

2. Specification

2-1 Set specification

Item	Features	Remark
PDP Module	U1	Samsung SDI
RF	Digital/Analog (DTV Built in)	NTSC/VSB/QAM Tuner
Power	Samsung Electro Mechanics SMPS	
Video	NTSC 3.58, ATSC/Component/HDMI	
Sound	SRS TruSurround HD, Dolby Digital	
Brightness	1,500 Cd/m2	
Equalizer	5 Band	
Auto Volume control	0	
Speaker Output	10W+10W	
PiP	X	
Caption	0	
AV input	1	Component Y input
Component	2	
HDMI	2	DVI sound support
Optical out	1	
USB	1	Service Only
Antenna	1	(Cable or Air)
Audio Output	AUDIO (L/R)/Optical Out	

2. Specification

2-2 Set detail specification

Item	Features	Remark
Dimensions (WxHxD)	1229.8 x 815.4 x 299.3mm	with stand
Weight	33.2Kg	with stand
HDMI PC resolution	1360x768	
Power consumption	Max:350W Watt hour meter: 240W	
Voltage	AC 100~240V, 60Hz	
Video input	AV1 COMPONENT1 - 480i/480p/720p/1080i/1080p COMPONENT2 - 480i/480p/720p/1080i/1080p HDMI1 : 480p/720p/1080i/1080p HDMI2(DVI Compatible):480p/720p/1080i/1080p	.480i can be displayed on HDMI, however it is not contained in EDID data
Audio input	AV1 COMPONENT1 - 480i/480p/720p/1080i/1080p COMPONENT2 - 480i/480p/720p/1080i/1080p DVI (HDMI2)	

2. Specification

2-3 Panel specification

Item	Specifications
Panel Model	S50HW-YB04
Display pixels	1365(H) x 768(V)
Display area	1105.65x622.08mm
Pixel pitch	810. x 810.
Display colors	1073.7 million colors (10Bit)
Pixel Arrangement	R, G, B Non stripe
Brightness	Typical 1,500 cd/.
Contrast ratio	Typical 10,000:1
Viewing angle	Over 160
Color Chromaticity (CIE)	White: $x = 0.285$, $y = 0.293$
Frame Rate	50Hz/60Hz
Response time	0.001mS

2. Specification

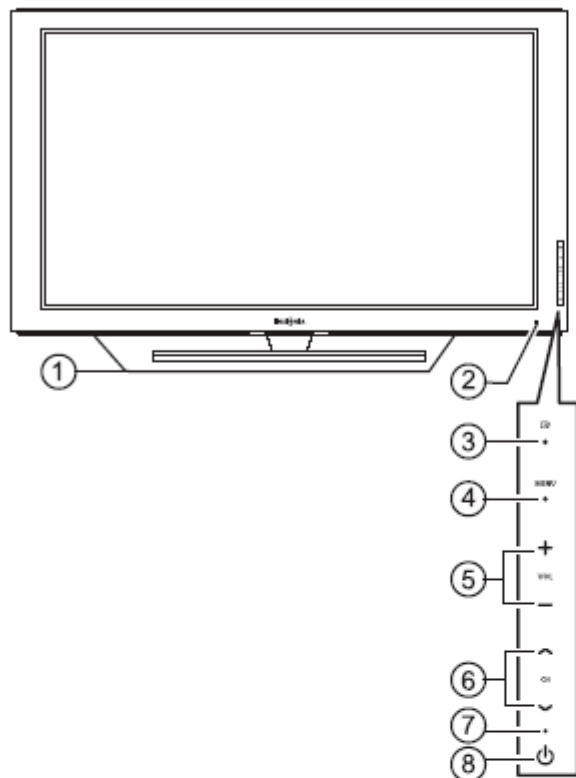
2-3 HDMI/DVI input resolution

Mode	Resolution	Horizontal frequency (kHz)	Vertical frequency (Hz)	Pixel clock frequency (MHz)	Sync polarity (H/V)	NS-P501Q-10A
IBM	640 × 350	31.469	70.086	25.175	+ / -	Y
	720 × 400	31.469	70.087	28.322	- / +	Y
MAC	640 × 480	35.000	66.667	30.240	- / -	Y
	832 × 624	49.726	74.551	57.284	- / -	Y
VESA DMT	640 × 480	31.469	59.940	25.175	- / -	Y
	640 × 480	37.861	72.809	31.500	- / -	Y
	640 × 480	37.500	75.000	31.500	- / -	Y
	800 × 600	37.879	60.317	40.000	+ / +	Y
	800 × 600	48.077	72.188	50.000	+ / +	Y
	800 × 600	46.875	75.000	49.500	+ / +	Y
	1024 × 768	48.363	60.004	65.000	- / -	Y
	1024 × 768	56.476	70.069	75.000	- / -	Y
	1024 × 768	60.023	75.029	78.750	+ / +	Y
	1360 × 768	47.712	60.015	85.500	+ / +	Y
VESA CVT	720 × 576	35.910	59.950	32.750	- / +	Y
	1280 × 720	44.772	59.855	74.500	- / +	Y
	1280 × 720	56.456	74.777	95.750	- / +	Y
VESA GTF	1280 × 720	52.500	70.000	89.040	- / +	Y

3. Front Panel & Function Control Description

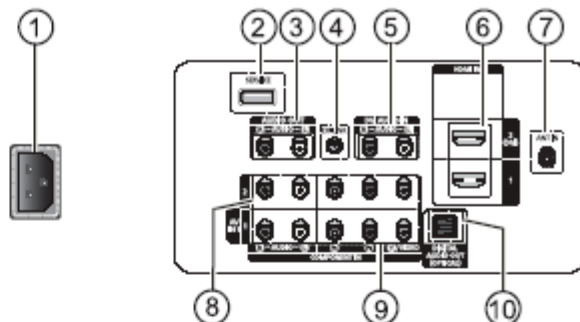
3-1 Front Back specification

Front



#	Item	Description
①	Speakers	Outputs the sound from your TV.
②	Remote control sensor	Receives signals from the remote control. Do not block.
③	INPUT button	Press to select the video input source. For more information, see "Selecting the video input source" on page 16. In on-screen menus, this button functions like the ENTER button on the remote control.
④	MENU button	Press to open the on-screen menu.
⑤	VOL+/VOL- buttons	Press to increase or decrease the volume.
⑥	CH ^/CH v buttons	Press to tune to the next or previous channel in the channel list. For more information, see "Selecting a channel" on page 18.
⑦	Power indicator	Blinks, then turns off when you turn on your TV. Lights when you turn off your TV.
⑧	(power)	Press to turn your TV on or off (standby mode). When you turn off your TV, power still flows into it. To disconnect power, unplug the power cord.

Back

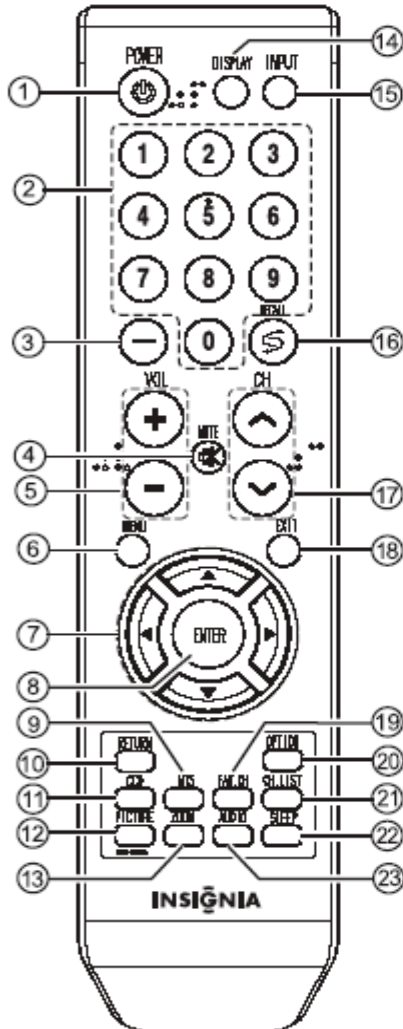


#	Jack	Description
①	Power in	Connect the power cord to this jack.
②	SERVICE	Used for service only.
③	AUDIO OUT L-AUDIO-R	Connect an analog audio amplifier to these jacks. For more information, see "Connecting an analog audio amplifier" on page 14.
④	EX-LINK	Used for service only.
⑤	DVI AUDIO IN L-AUDIO-R	Connect the audio for a DVI device to these jacks. For more information, see "Connecting a DVI device" on page 13.
⑥	HDMI IN 1/ HDMI IN 2 (DVI)	Connect an HDMI device to either HDMI jack. For more information, see "Connecting an HDMI device" on page 13. Connect a DVI device to the HDMI IN 2 jack. For more information, see "Connecting a DVI device" on page 13.
⑦	ANT IN	Connect an the cable for an outdoor antenna or cable TV to this jack. For more information, see "Connecting an outdoor antenna" on page 10 or "Connecting cable TV" on page 11.
⑧	COMPONENT IN 2 PR, PB, Y and L-AUDIO-R AV1 IN VIDEO and L-AUDIO-R	Connect a component video device to these jacks, or connect an analog video device to the Y/VIDEO jack and the audio jacks. For more information, see "Connecting a component video device" on page 13 or "Connecting a VCR" on page 12.
⑨	COMPONENT IN 2 PR, PB, Y and AUDIO L/R	Connect a component video device to these jacks. For more information, see "Connecting a component video device" on page 13.
⑩	DIGITAL AUDIO OUT (OPTICAL)	Connect a digital audio amplifier to this jack. For more information, see "Connecting a digital audio amplifier" on page 14.

3. Front Panel & Function Control Description

3-2 Remote control specification

Remote control



#	Button	Description
①	POWER	Press to turn your TV on or off (standby mode). When you turn off your TV, power still flows into it. To disconnect power, unplug the power cord.
②	Numbers	Press to change the channel. For more information, see "Selecting a channel" on page 18.
③	—	Press to select a sub-channel. For more information, see "Selecting a channel" on page 18.
④	MUTE	Press to turn off the sound. Press again to turn the sound back on.
⑤	VOL+/VOL-	Press to increase or decrease the volume.
⑥	MENU	Press to open the on-screen menu.
⑦	▲▼◀▶	In the on-screen menu, press to select menu items or adjust settings.
⑧	ENTER	In the on-screen menu, press to confirm selections or changes.
⑨	MTS	Press to select the audio mode. You can select Stereo, Mono, or SAP (separate audio program).

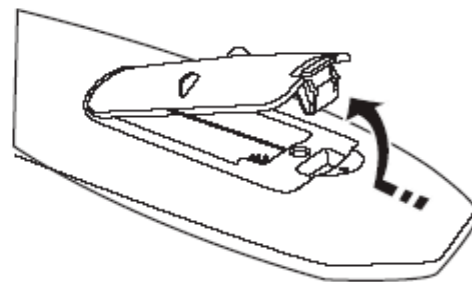
#	Button	Description
⑩	RETURN	In the on-screen menu, press to return to the previous menu.
⑪	CCD	Press to turn closed captioning on or off. Not available in component video or HDMI mode.
⑫	PICTURE	Press to select the picture mode. For more information, see "Adjusting the TV picture" on page 18.
⑬	ZOOM	Press to select the picture size (aspect ratio). For more information, see "Adjusting the TV picture" on page 18.
⑭	DISPLAY	Press to display information. For more information, see "Displaying additional information" on page 18.
⑮	INPUT	Press to select the video input source. For more information, see "Selecting the video input source" on page 16.
⑯	RECALL	Press to tune to the previously viewed channel.
⑰	CH ▲/CH ▼	Press to tune to the next or previous channel in the channel list. For more information, see "Selecting a channel" on page 18.
⑱	EXIT	Press to close the on-screen menu.
⑲	FAV.CH	Press to select a favorite channel. For more information, see "Viewing a favorite channel" on page 26.
⑳	OPTION	Press to display the channel list sub-menu.
㉑	CH.LIST	Press to open the channel list. For more information, see "Automatically searching for channels" on page 23.
㉒	SLEEP	Press to set the sleep timer. For more information, see "Setting a wake-up timer" on page 35.
㉓	AUDIO	Press to select the sound mode. For more information, see "Adjusting the sound" on page 22.

Using the remote control

Installing remote control batteries

To install remote control batteries:

- 1 Press the battery cover latch in, then lift the cover.

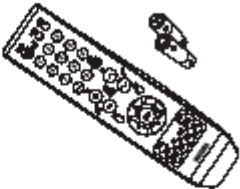






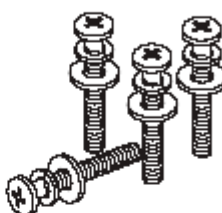



3. Front Panel & Function Control Description

3-3 Accessories

Accessories

Make sure that the following accessories are provided in the packaging:

Accessories	
Remote control with two AAA batteries	
Power cord	
Ferrite core	
Base cover with screws	

Accessories	
Anti-fall device with screw	
Wall-mount screws (4)	
Screw-holder rings (4)	
Cleaning cloth	
User Guide and Quick Setup Guide	

Cleaning cloth

The cleaning cloth is for cleaning the TV screen only. Do not use the cleaning cloth to clean any other part of your TV.

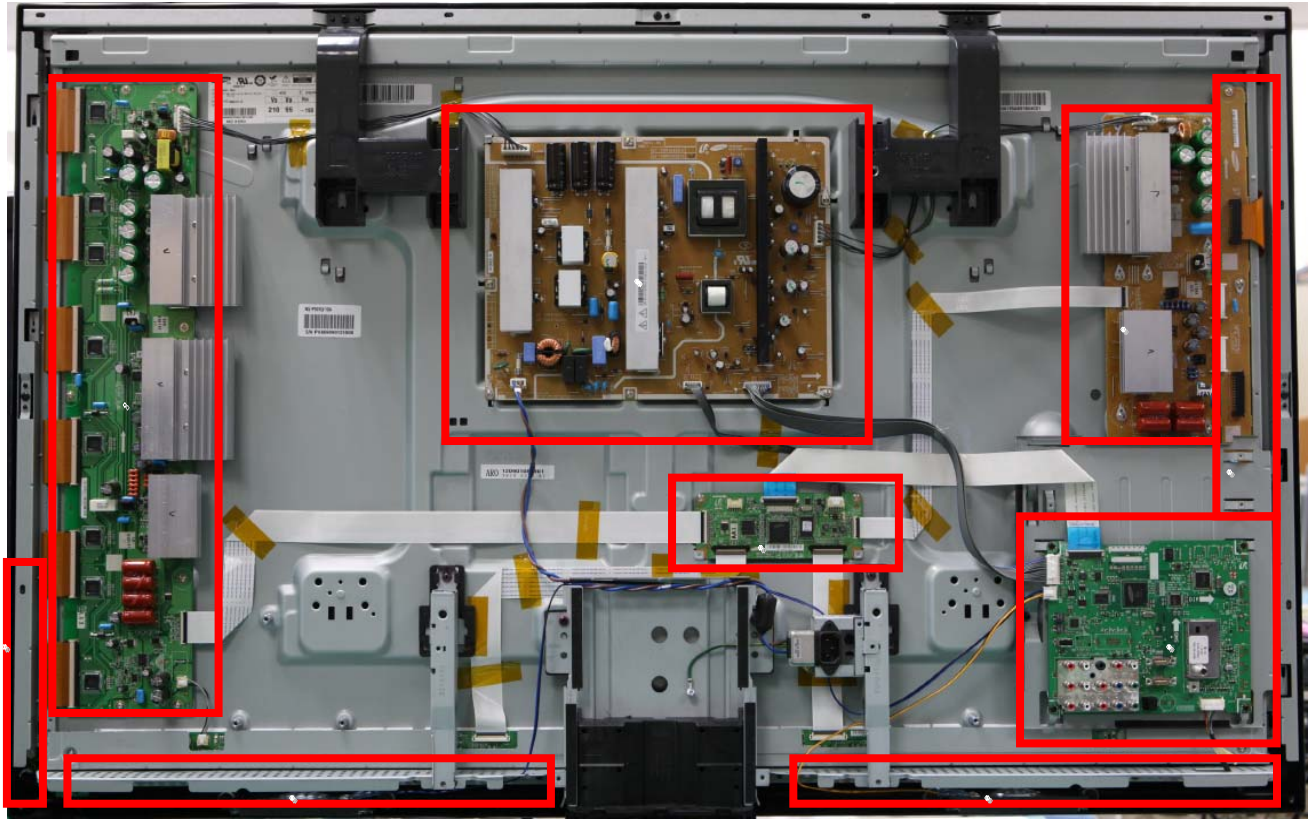
4. Disassembly & Reassembly

Notice

- Be sure to separate the power cord before disassembling the unit.
- Discharge the capacitors first when separating PCB's with high capacity capacitors such as SMPS, X Main Board, Y Main Board, etc. (A spark may be generated by the electric charge, and there is danger of electronic shock.)
- Check that the cables are properly connected referring to the circuit diagram when disassembling or assembling the unit
- taking care not to damage the cables.
- Take care not to scratch the Glass Filter in the front.
- Assemble the boards in the reverse order of the disassembly.
- The plasma must be laid down on a flat padded surface for disassembly and reassembly.

4. Disassembly & Reassembly

4-1 Part name



No	Name	Function
1	SMPS	Power supply
2	X-Main	X Drive (X Sustain signal generate)
3	Y-Main+Y Buffer	Y Drive (Y Sustain signal generate)
4	Logic board	Controller for Panel
5	E Buffer	Y-axis scan driver left
6	F Buffer	Y-axis scan driver right
7	Main board (image)	Image processor
8	Function board	Function Key & remote control
9	X-Main Buffer board	X-Drive Buffer

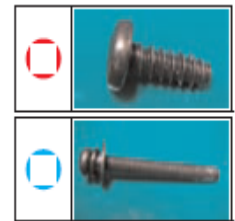
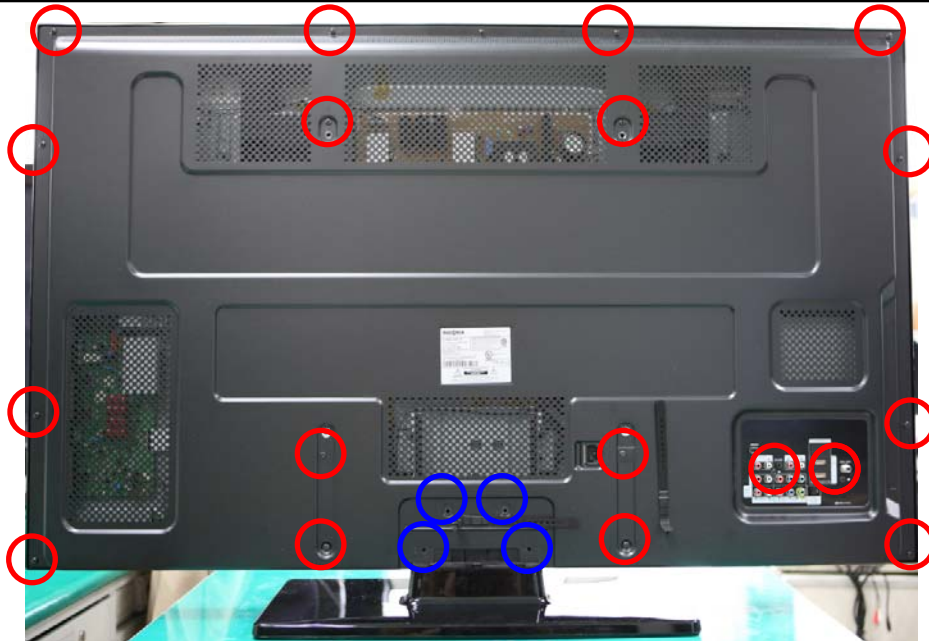
4. Disassembly & Reassembly

4-2 Separation of ASSY COVER P-REAR

1. Remove 18 screws. () : M4,L3,Black
2. Remove 4 screws. () : M4,L35,Black
3. Remove the rear cover.

Please lay the PDP unit face down on a soft surface when removing the stand.

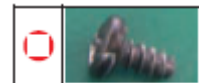
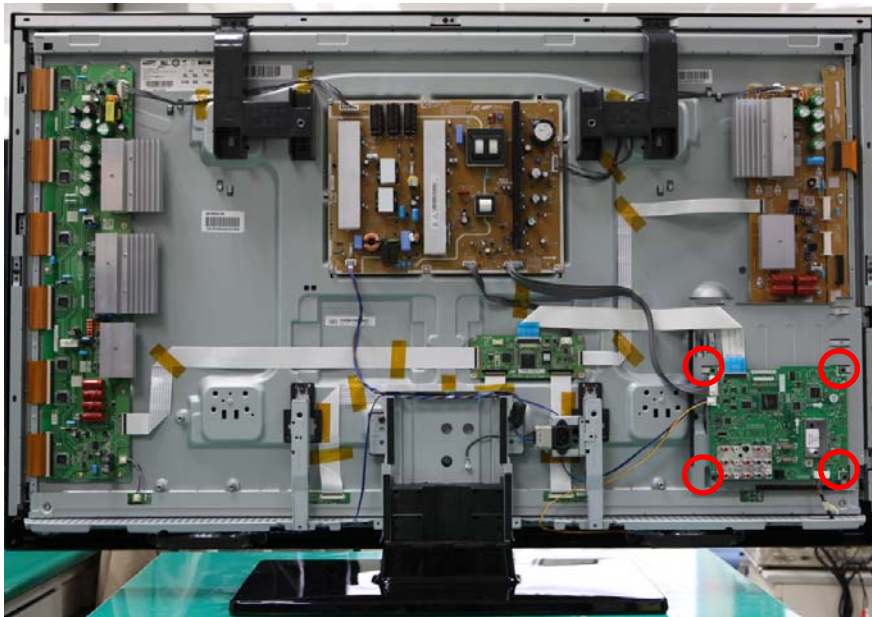
Cover Rear



4. Disassembly & Reassembly

4-3 Separation of ASSY PCB MISC-Main

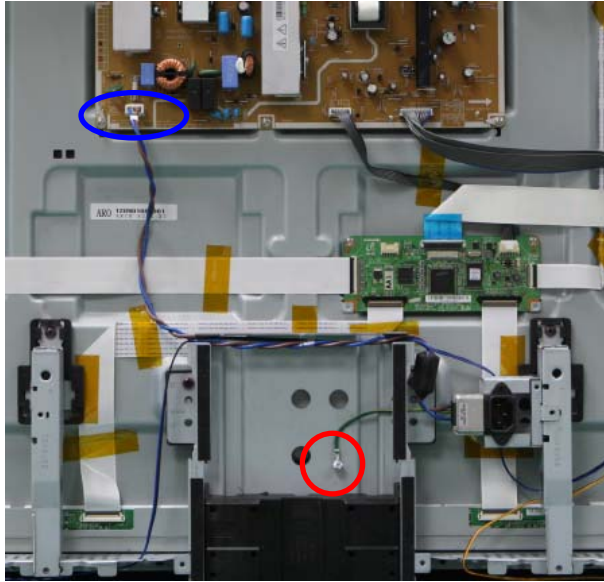
1. Detach all connectors from the Main Board
2. Remove 4 screw: : M3,L6,Black
3. Remove the Main Board



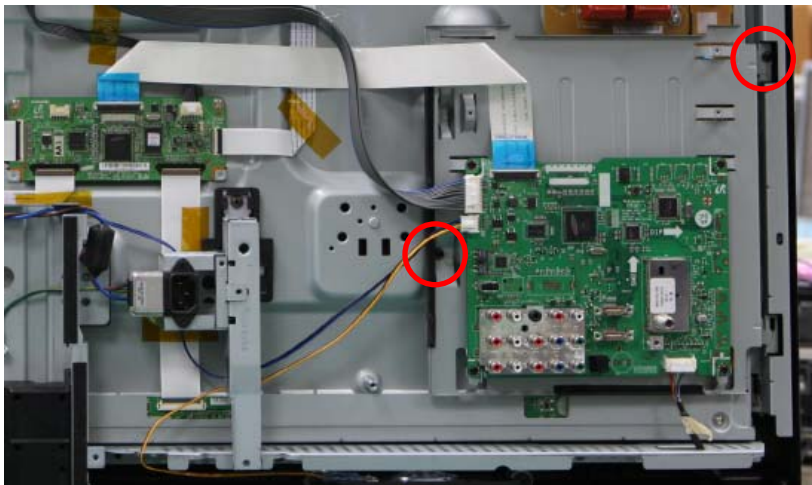
4. Disassembly & Reassembly

4-5 Separation of Filter-EMI AC Line and Bracket PCB

1. Detach connector from SMPS (Blue circle)
2. Remove 1 screw: : M4,L6,White
3. Separate Filter-EMI AC line from bracket



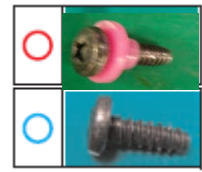
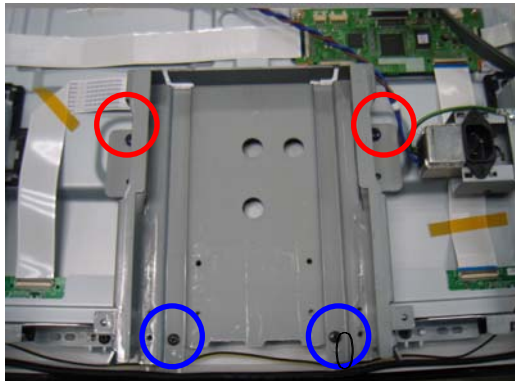
1. Remove screw M4,L12,Black
2. Remove Bracket-PCB



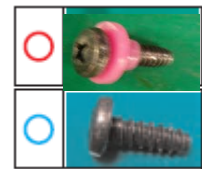
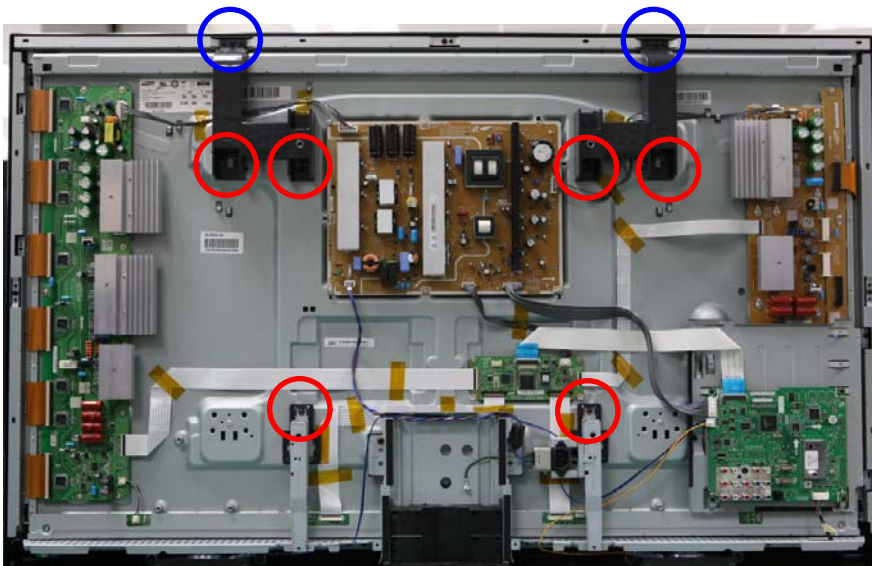
4. Disassembly & Reassembly

4-6 Separation of Stand Bracket

1. Remove 2 screws. (M4,L10,Red cap Machine)
2. Remove 2 screws. (M4,L12,Tapping)
3. Remove Stand bracket



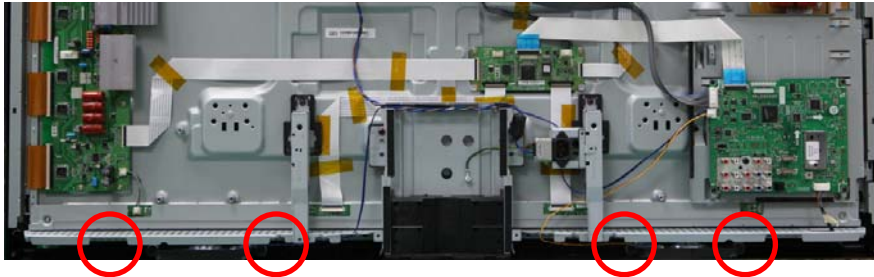
1. Remove 6 screws (M4,L10,Black,Machine)
2. Remove 2 screws (M4,L12,Black,Tapping)
3. Remove Wall Bracket.



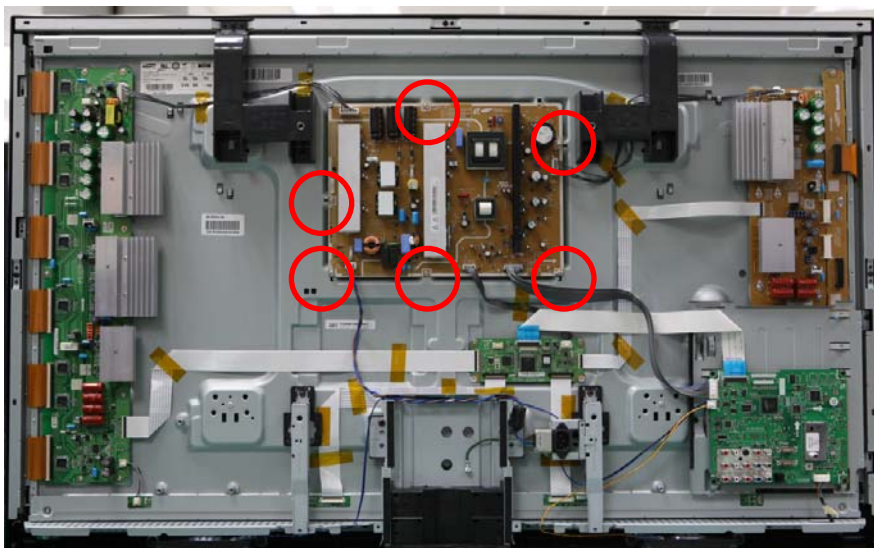
4. Disassembly & Reassembly

4-7 Separation of Speaker and SMPS

1. Remove 4 screws. (M4,L10,Tapping)
2. Remove the Speaker



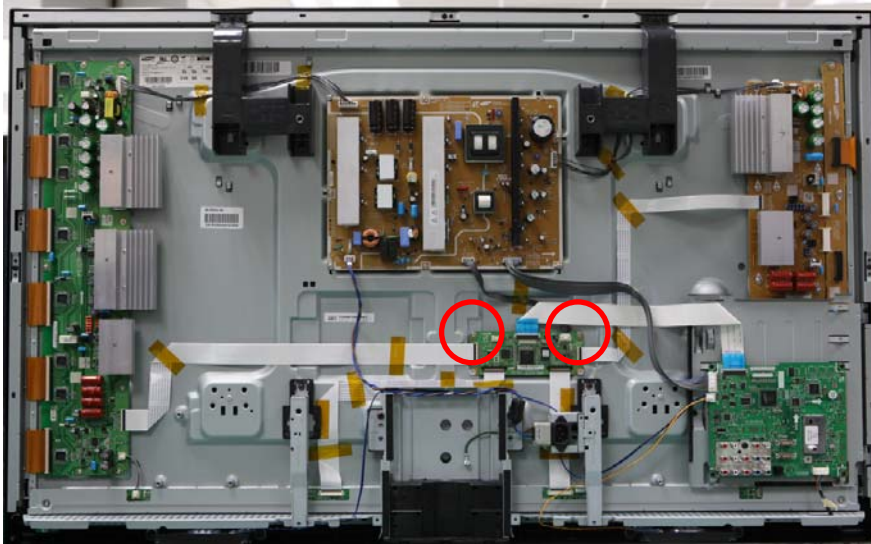
1. Remove 4 screws (M3,L10,White,Machine)
2. Remove SMPS unit.



4. Disassembly & Reassembly

4-8 Separation of the Logic board

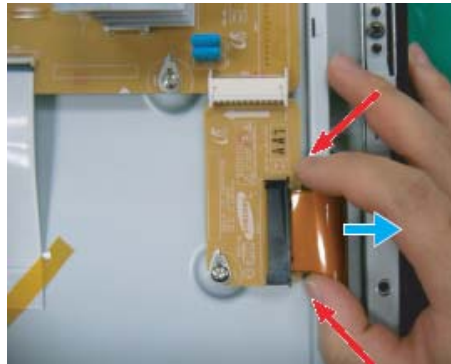
1. Remove 4 screws (M3,L10,White,Machine)
2. Remove the Logic board



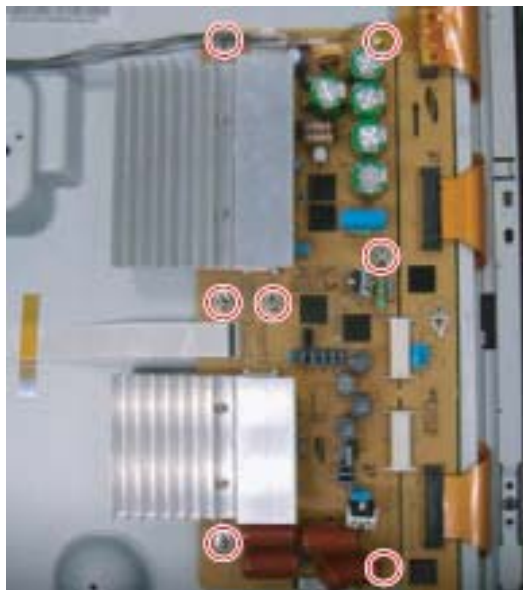
4. Disassembly & Reassembly

4-9 Separation of X main board

1. Detach all Connectors from the X Main board
2. To separate the Flat Cable of the X-Board, press the upper and the lower sides of the connector.

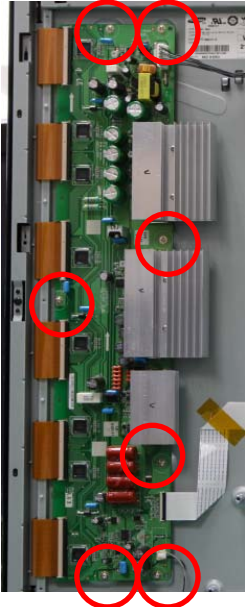

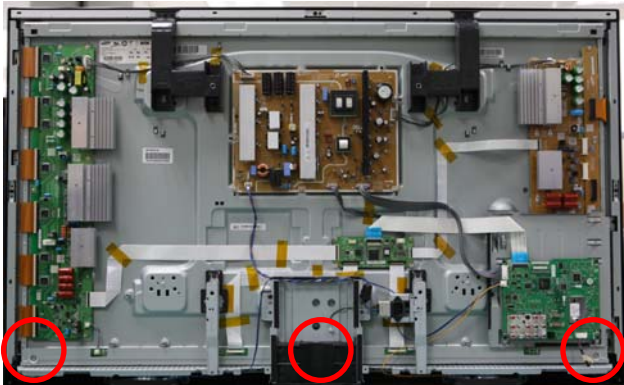



1. Remove 4 screws (M3,L10,White,Machine)
2. Remove X-main board.



4. Disassembly & Reassembly

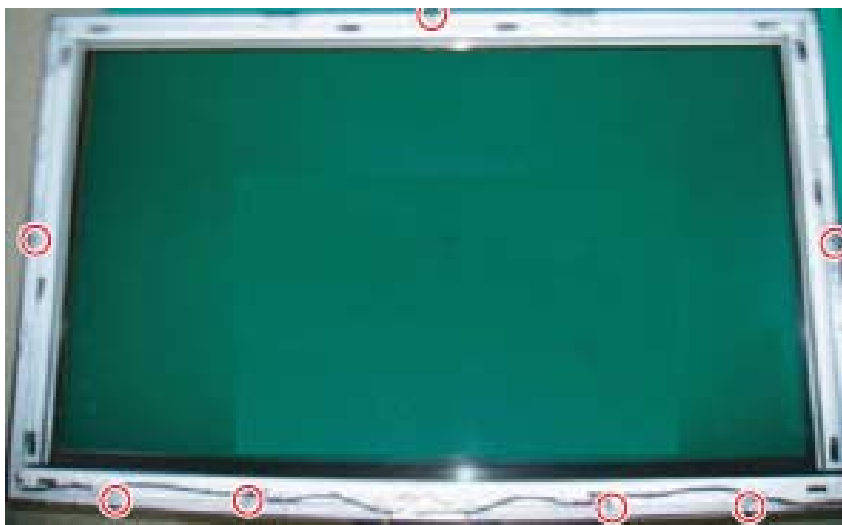
4-10 Separation of Y main board and Buffer board

<ol style="list-style-type: none">1. Detach all Connectors from the Y Main board2. Remove 9 screws(M3,L10,White,Machine)	
	
<ol style="list-style-type: none">1. Remove 3 screws (M3,L10,White,Machine)2. Remove Buffer board cover.	
	

4. Disassembly & Reassembly

4-11 Separation of the Panel Bracket

1. Remove 7 screws (M4,L12,Black,Tapping)
2. Remove the Panel Bracket



5. Troubleshooting

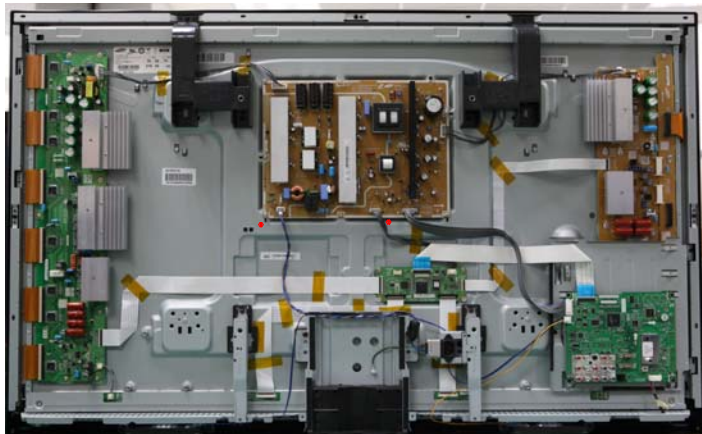
5-1 Checkpoints by Error mode

1. Check the various cable connections first.
2. Check to see if there is a burnt or damaged cable.
3. Check to see if there is a disconnected or loose cable connection.
4. Check to see if the cables are connected according to the connection diagram.
5. Check the power input to the Main Board.
6. Check the voltage in and out between the SMPS .Main Board, between the SMPS .X, Y–Main Board, and between the Logic Boards.

5. Troubleshooting

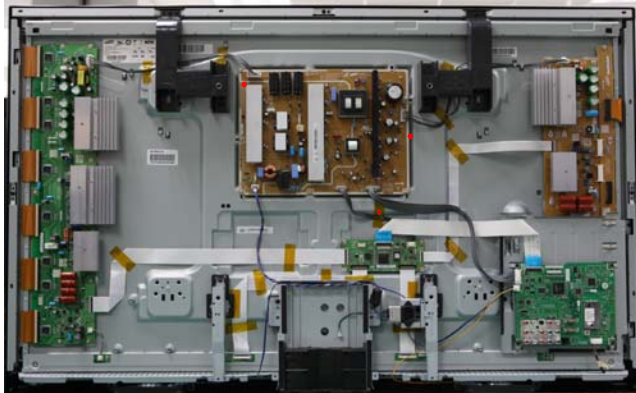
5-2 Checkpoints by Error Mode

5-2-1 No Power

Symptom	<ul style="list-style-type: none"> -The LED on the front panel do not work when connecting the power cord - The SMPS relay does not work when connecting the power cord. - The units appears to be dead.
Major Checklist	<p>The SMPS relay or the LED on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following:- Check the internal cable connection status inside the unit.- Check the fuses of each part.- Check the output voltage of SMPS.- Replace the Main Board.</p>
Troubleshooting Procedures	 <pre> graph TD Q1["① Is the AC IN socket connector and the SMPS CN800S connected?"] A1["Insert the AC in connector and the SMPS CN800S connector"] Q2["① Is the Fuse (F801S) of the SMPS Power Input Part blown?"] A2["Replace Fuse (F801S)"] Q3["② SMPS CN801 Pin 3 : STB 5V Pin 2 PS-ON : Check to see if it is 0V"] A3["Replace the SMPS"] A4["Replace the Main Board"] Q1 -- No --> A1 Q1 -- Yes --> Q2 Q2 -- Yes --> A2 Q2 -- No --> Q3 Q3 -- No --> A3 Q3 -- Yes --> A4 </pre>

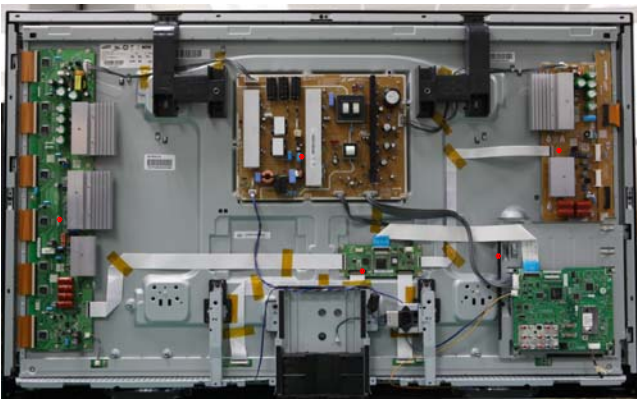
5. Troubleshooting

5-2-2 When the unit is repeatedly turned on and off

Symptom	The SMPS relay is repeatedly turned on and off.
Major Checklist	In general, the SMPS relay repeatedly turns on and off by the protection function due to a defect on a board connected to the SMPS.— Disconnect all cables from the SMPS, operate the SMPS alone and check if the SMPS works properly and if each voltage output is correct.— If the symptom continues even when SMPS is operated alone, replace the SMPS.— If the symptom is not observed when operating the SMPS alone, find any defective assemblies by connecting the cables one by one.
Troubleshooting Procedures	 <pre> graph TD Q1["① Does the symptom continue when connecting the power after removing CN804 from the SMPS?"] Q2["② Does the symptom continue when connecting the power after removing CN803 from the SMPS?"] Q3["③ Does the symptom continue when connecting the power after removing CN801 from the SMPS?"] R1["Replace the Y Main Board"] R2["Replace the X Main Board"] R3["Replace the Logic Board"] R4["Replace the SMPS"] Q1 -- No --> R1 Q1 -- Yes --> Q2 Q2 -- No --> R2 Q2 -- Yes --> Q3 Q3 -- No --> R3 Q3 -- Yes --> R4 </pre>
Caution	When separating and connecting the cables such as CN804, CN803 of the Main SMPS, CN4002 of the X Main Board, and CN5002 of the Y-Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after disconnecting the power cord from the unit.

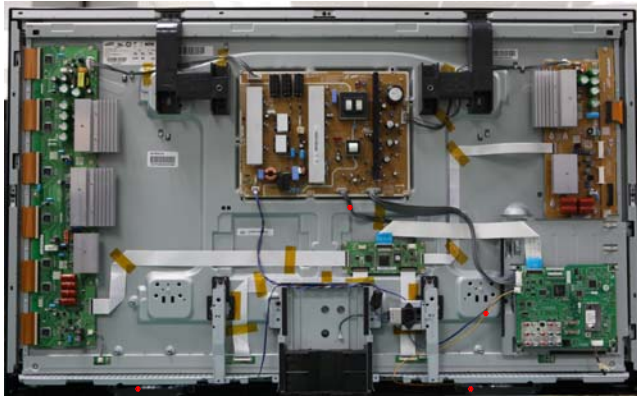
5. Troubleshooting

5-2-3 No Picture (When audio is normal)

Symptom	Audio is normal but no picture is displayed on the screen.
Major Checklist	<ul style="list-style-type: none"> -This may happen when the Main Board is functioning but the X, Y-Main Board, Logic Board, or Y-Buffer Boards are not - The output voltage of the Main SMPS. - This may happen when the LVDS cable connecting the Main Board and the Logic Board is disconnected.
Troubleshooting Procedures	 <pre> graph TD A[Check the LED operation of Logic Board Is it normally operating?] -- No --> B[Replace the Logic Board] A -- Yes --> C[Check the output of LVDS Is it normally operating?] C -- No --> D[Replace the Main Board] C -- Yes --> E[Check the each output of the SMPS Is it normally operating?] E -- No --> F[Replace the SMPS] E -- Yes --> G[Check the each output of the SMPS after disconnecting the power cable from SMPS. And replace X-main, Y-main Board, Y-scan Board.] G -- No --> H[Replace the Y Scan Board] </pre> <ul style="list-style-type: none"> • Check the LED operation of Logic Board Is it normally operating? <ul style="list-style-type: none"> No → Replace the Logic Board Yes → • Check the output of LVDS Is it normally operating? <ul style="list-style-type: none"> No → Replace the Main Board Yes → • Check the each output of the SMPS Is it normally operating? <ul style="list-style-type: none"> No → Replace the SMPS Yes → • Check the each output of the SMPS after disconnecting the power cable from SMPS. And replace X-main, Y-main Board, Y-scan Board. <ul style="list-style-type: none"> No → Replace the Y Scan Board
Caution	When separating and connecting the cables such as CN804,CN803 of the Main SMPS, CN4002of the X Main Board, and CN5002 of the Y-Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after disconnecting the power cord from the unit.

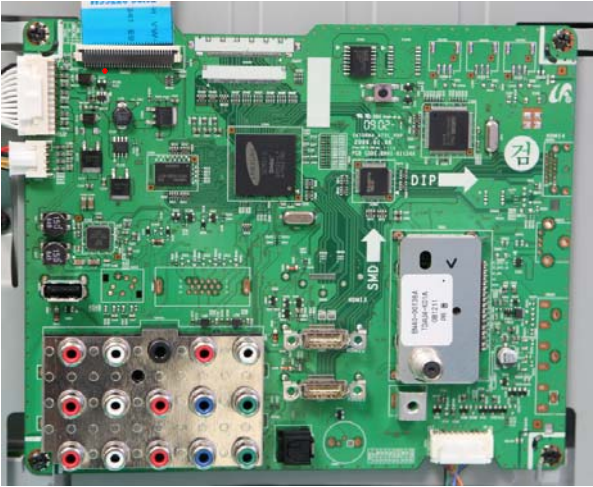
5. Troubleshooting

5-2-4 No Sound

Symptom	Video is normal but there is no sound.
Major Checklist	<ul style="list-style-type: none"> – When the speaker connectors are disconnected or damaged. – When the sound processing part of the Main Board is not functioning. – Speaker defect.
Troubleshooting Procedures	 <pre> graph TD Q1["① Is the cable connection between the Main Board and the speaker properly connected?"] A1["No"] --> R1["Connect the cable properly or replace the cable, if necessary."] Q1 -- Yes --> Q2["② Is the output voltage of SMPS normal? (CN801 #7,8)"] A2["No"] --> R2["Replace the SMPS"] Q2 -- Yes --> Q3["Is the speaker output terminal of the Main Board normal?"] A3["No"] --> R3["Replace the Main Board"] Q3 -- Yes --> R4["③ Replace the Speaker"] </pre>
Caution	When separating and connecting the cables such as CN804,CN803 of the Main SMPS, CN4002of the X Main Board, and CN5002 of the Y-Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after disconnecting the power cord from the unit.

5. Troubleshooting

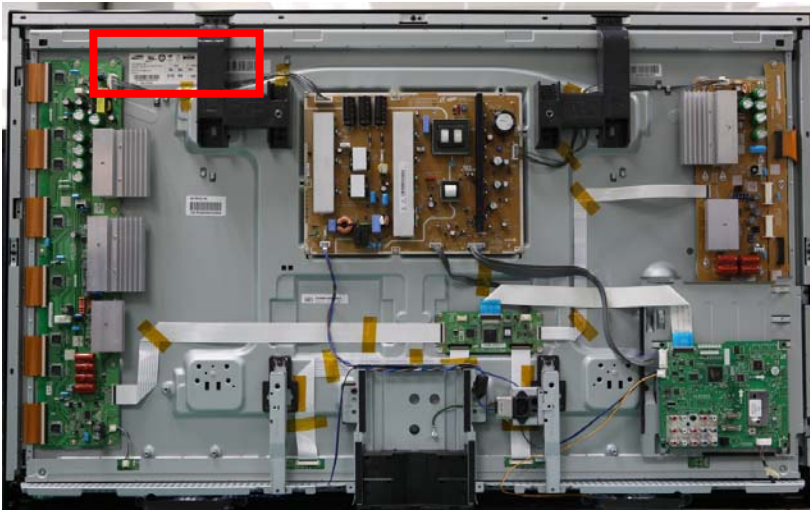
5-2-5 No Video

Symptom	A normal/cable network analog broadcast screen is blank or abnormal but OSD is OK..
Major Checklist	<ul style="list-style-type: none"> - Check the antenna connection settings (Air: NTSC / ATSC, Cable: NTSC) - Check the CVBS cable connection. - Check the power input of the Main board.
Troubleshooting Procedures	 <pre> graph TD A[Is the antenna connection setting properly configured?] -- No --> B[Configure properly] A -- Yes --> C[1 Check CN1001 pin2 for +5V] C -- No --> D[Replace the SMPS] C -- Yes --> E[Replace the Main Board] </pre>

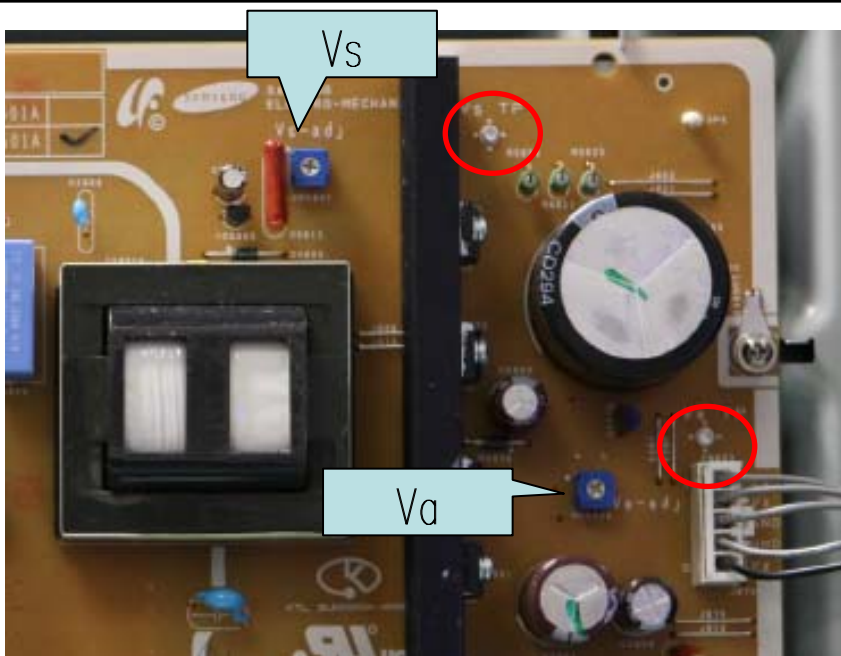
5. Troubleshooting

5-3 Voltage Adjustment

1. After replacing the SMPS or PDP panel, you must adjust the voltage referring to the voltage label printed on the panel.
(If you do not adjust the voltage, an abnormal discharge symptom may appear.)
2. It need Vs and Va only.



Voltage Label



TP point for adjust

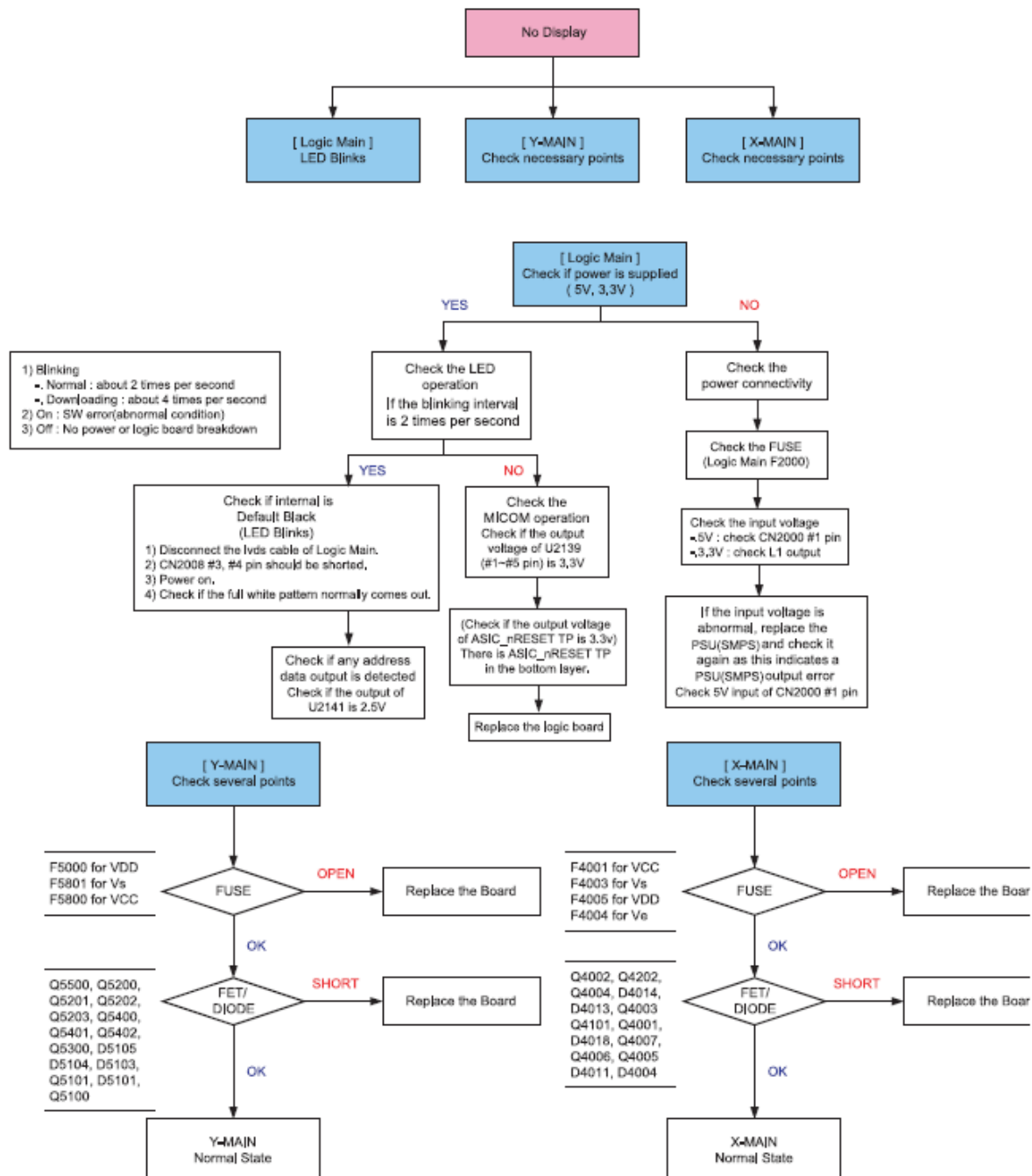
5. Troubleshooting

5-4 Panel Problems.

5-4-1 No Display

. No Display is related with Y-MAIN, X-MAIN, Logic Main and so on.

This page shows you how to check the boards, and the following pages show you how to find the defective board.

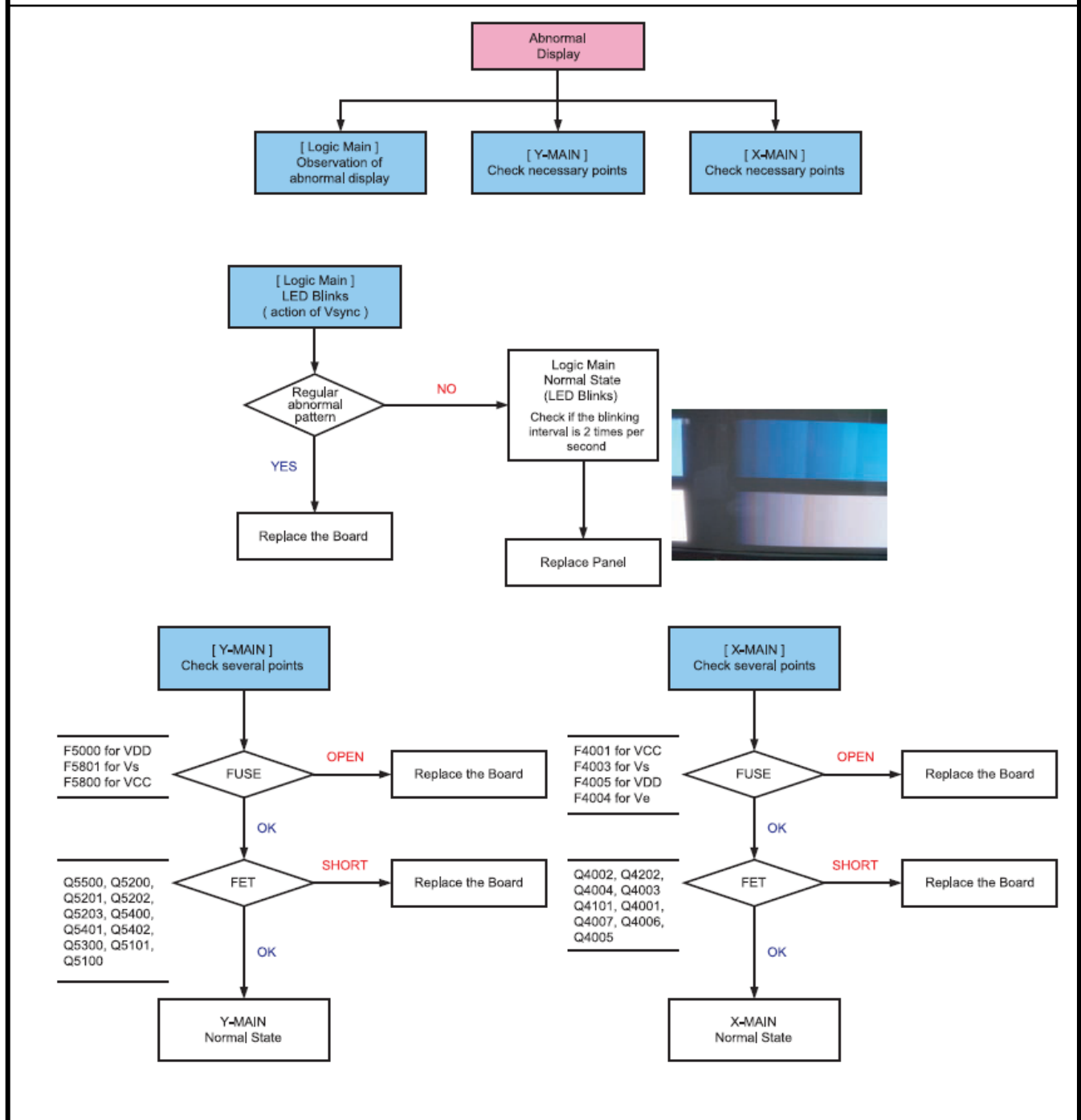


5. Troubleshooting

5-4-2 Abnormal display on Screen

. Abnormal Display is related with Y-MAIN, X-MAIN, Logic Main and so on.

This page shows you how to check the boards, and the following pages show you how to find the defective board.



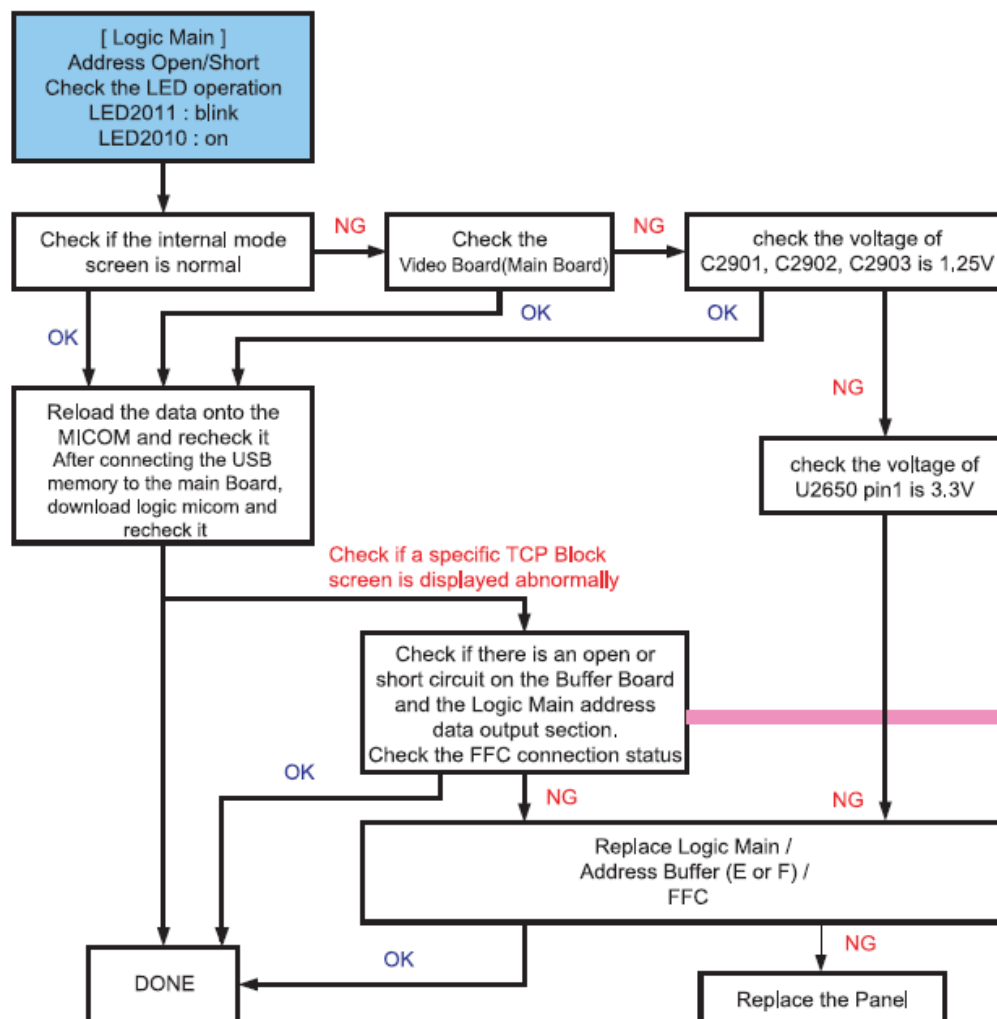
5. Troubleshooting

5-4-3 Buffer board Open and Short

. Buffer board (Address) Open and Short is related with Logic Main, Logic Buffer, FFC, TCP film and so on.

This page shows you how to check the boards, and the following pages show you how to find the defective board.

- Open : Black line appears in the picture.
- Short : Discolored vertical line appears in the full red or green pattern.



5. Troubleshooting

5-4-4 Abnormal Display



A blank vertical cell (block) appears on the screen.

. Address buffer defect– Replace the corresponding upper/lower buffers (E, F)COF defect (burnt)– Replace the module



A blank upper (or lower) block appears on the screen.

. Y Buffer defect. Replace the Y Buffer board



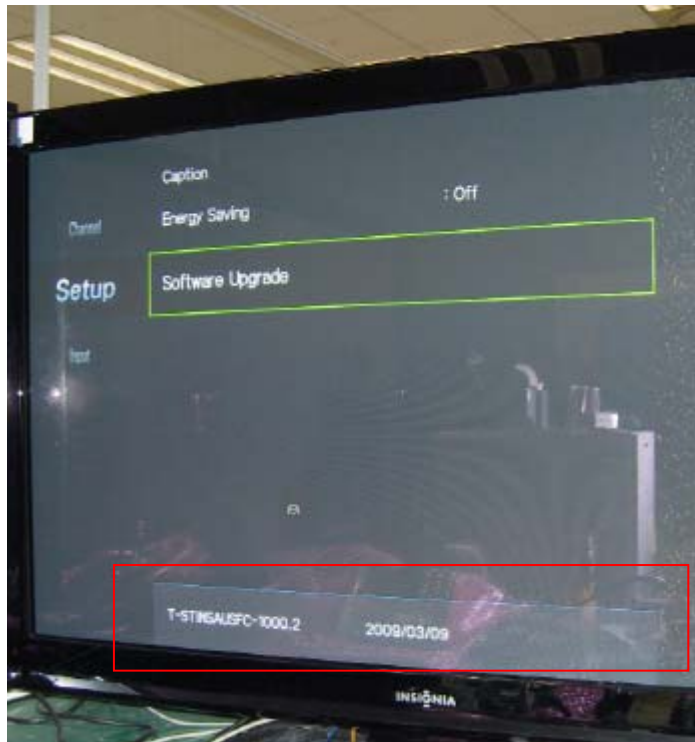
Dim screen (blurred in red)

. X–Main board defect– Replace the X–Main board.

5. Troubleshooting

5-5 How to check the current version of the program.

- .Procedures for checking in the User Menu
- .Select the "Setup" menu in the Menu screen
- .Place the cursor over the "Software Upgrade" of "Setup" and press the "DISPLAY" key on the remote control.
- .The version of the program is displayed at the bottom of the Menu screen



→ Program version

5. Troubleshooting

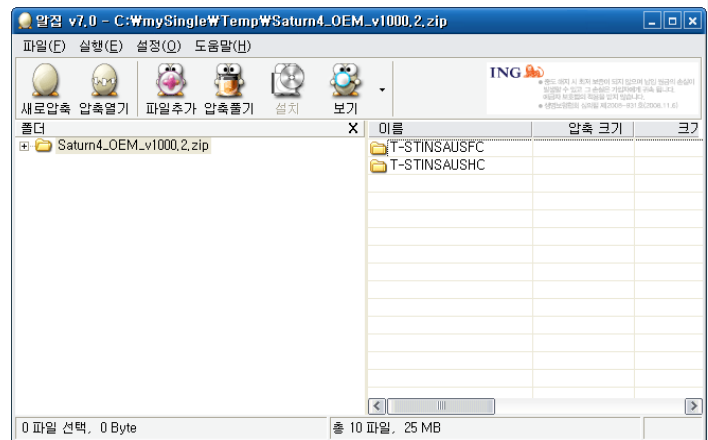
5-6 How to SW Upgrade (USB copy from PC)

Copy the upgrade files into the path .T-STINSAUSHC. or .T-STINSAUSFC. in USB flash driver.

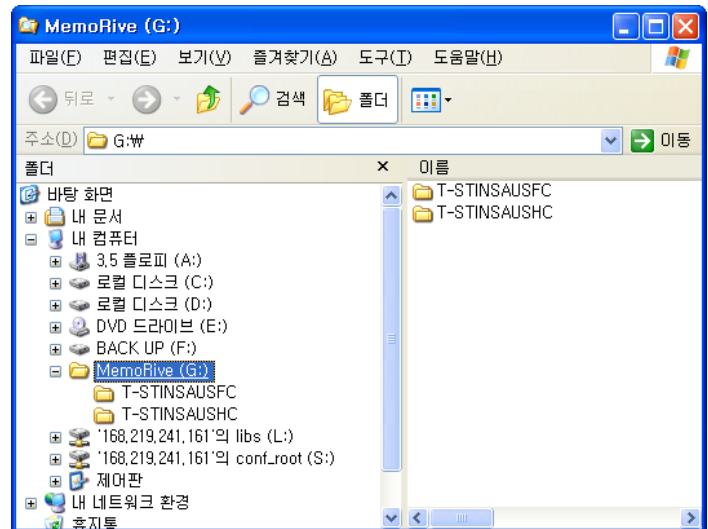
T-STINSAUSHC: NS-P42Q-10A, NS-P501Q-10A

T-STINSAUSFC: NS-P502Q-10A

. Extract released SW firmware.



. Copy the upgrade files in roots of USB flash driver



5. Troubleshooting

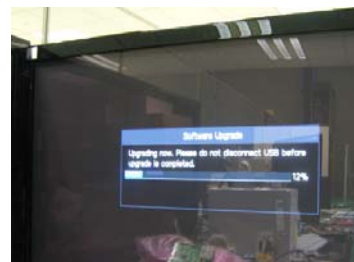
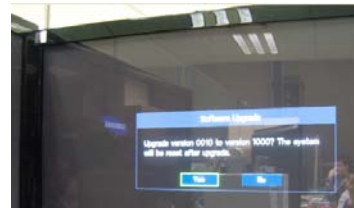
5-7 How to SW Upgrade in TV

Copy the upgrade files into the path "T-STINSAUSHC" or "T-STINSAUSFC" in USB flash driver.

T-STINSAUSHC: NS-P42Q-10A, NS-P501Q-10A

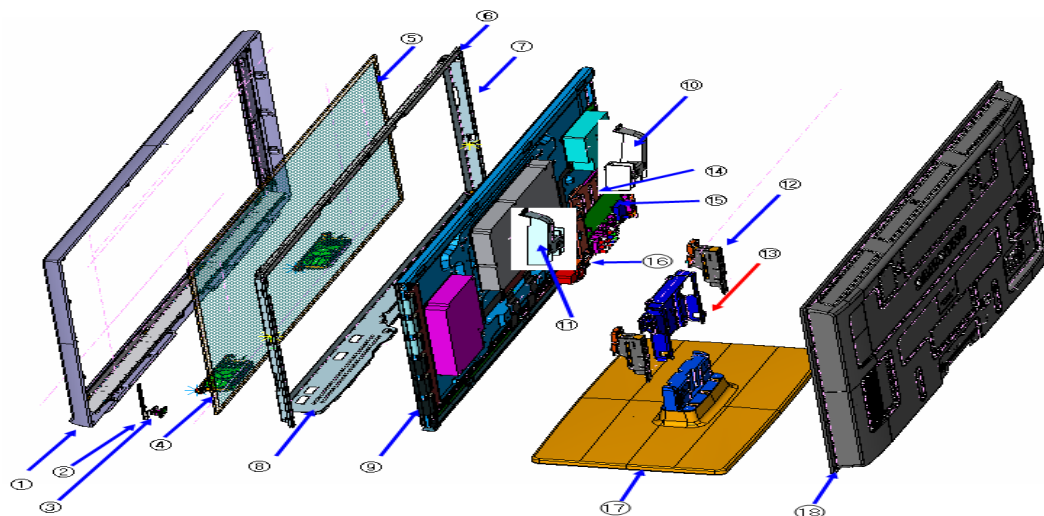
T-STINSAUSFC: NS-P502Q-10A

- . Insert the USB Memory Stick to the USB port in Stand-by mode.
- . Turn the power on.
- . Press "MENU" and find "Software Upgrade" in Menu "SETUP".
- . Select the " Software Upgrade" from the menu.
- . The banner OSD "Scanning for USB..." is displayed.
- . The banner OSD "Upgrade version **** to version ****? ..." is displayed. Select "Yes".
- . The banner OSD "Upgrading now. Please do not disconnect USB before upgrade is completed"
(Warning: Don't remove USB flash driver during upgrade.)
- . The banner OSD "Upgrade is completed" is displayed when the upgrade is completed
- . TV turn off and on automatically.
- . Remove the USB flash driver from PDPTV and check the program version.



6. Exploded view and spare part list

6-1 Exploded view



NO.	ITEM	Q'Ty
1	ASSY COVER P-FRONT	1
2	ASSY BOARD P-TOUCH FUNCTION&IR	1
3	WINDOW-RMC	1
4	ASSY SPEAKER P	1
5	GLASS-FILTER EMI	1
6	ASSY BRACKET P-FILTER TOP	1
7	ASSY BRACKET P-FILTER SIDE	2
8	ASSY BRACKET P-FILTER BOTTOM	1
9	ASSY PDP MODULE P	1
10	HOLDER-MODULE TOP,R	1
11	HOLDER-MODULE TOP,L	1
12	ASSY BRACKET P-WALL BOTTOM	2
13	ASSY BRACKET P-SUPPORT STAND	1
14	ASSY BRACKET P-PCB	1
15	ASSY PCB MISC-MAIN	1
16	FILTER-EMI AC LINE	1
17	ASSY STAND P-BASE	1
18	ASSY COVER P-REAR	1

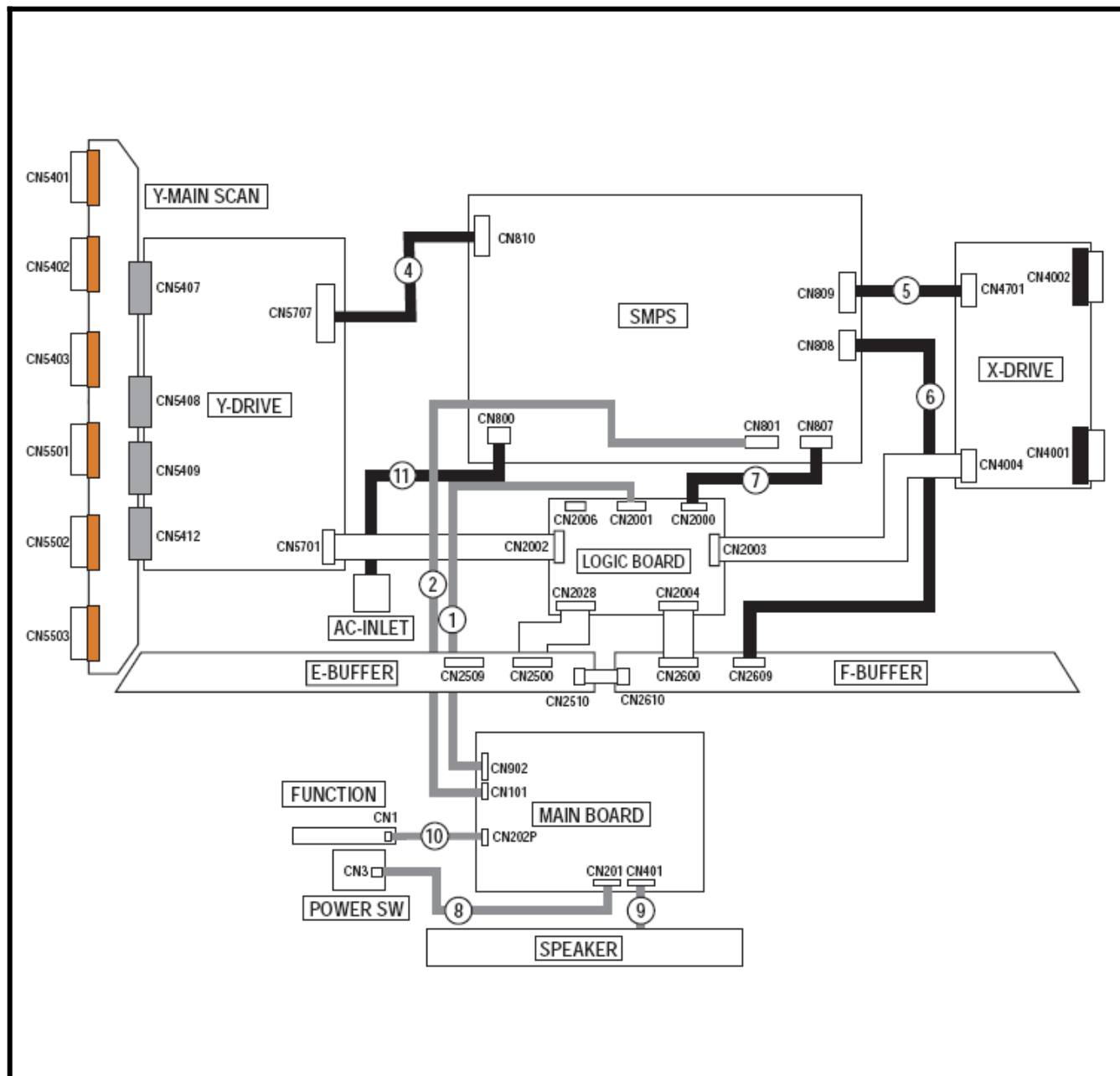
6. Exploded view and Service parts list

6-2 Service parts list

Code No	Description	Remark	Q'ty
BN96-10624F	ASSY COVER P-REAR	PB430 50,PCM T0.5,BKM-P703	1
BN94-02901A	ASSY PCB MAIN	NS-P501Q-10A	1
BN39-00802S	LEAD CONNECTOR	LILY2 50",UL1007#26,24p/2	1
BN96-11136A	ASSY COVER P-FRONT	50 INSIGNIA	1
BN96-09739A	ASSY PDP P-LOGIC MAIN BOARD	S50HW-YB04,P	1
BN96-09741A	ASSY PDP P-ADDRESS F-BUFFER BO	S50HW-YB0	1
BN96-09790A	ASSY PDP MODULE P	S50HW-YD11,PP50HB056A,	1
BN96-09736A	ASSY PDP P-X-MAIN BOARD	S50HW-YB04,PL50H	1
BN96-09737A	ASSY PDP P-X-MAIN BUFFER BOARD	S50HW-YB0	1
BN59-00892A	REMOCON	INSIGNIA,TM85,20Pin,37,OEM	1
BN96-09738A	ASSY PDP P-Y-MAIN BOARD	S50HW-YB04,PL50H	1
BN44-00274A	SMPS-PDP TV	50U1_SS,PSPF520501A,AC/DC,43	1
BN96-09740A	ASSY PDP P-ADDRESS E-BUFFER BO	S50HW-YB0	1
BN67-00249A	Glass-Filter EMI	T=38%,1154.5x670.5,3.0t,Sputter	1
BN96-07766N	LVDS cable	PB4B,FFC CABLE,410mm,30PIN	1
2901-001548	FILTER-EMI AC LINE	250V,6A,UL, CSA, VDE, EK,0.1uF/2000pF	1

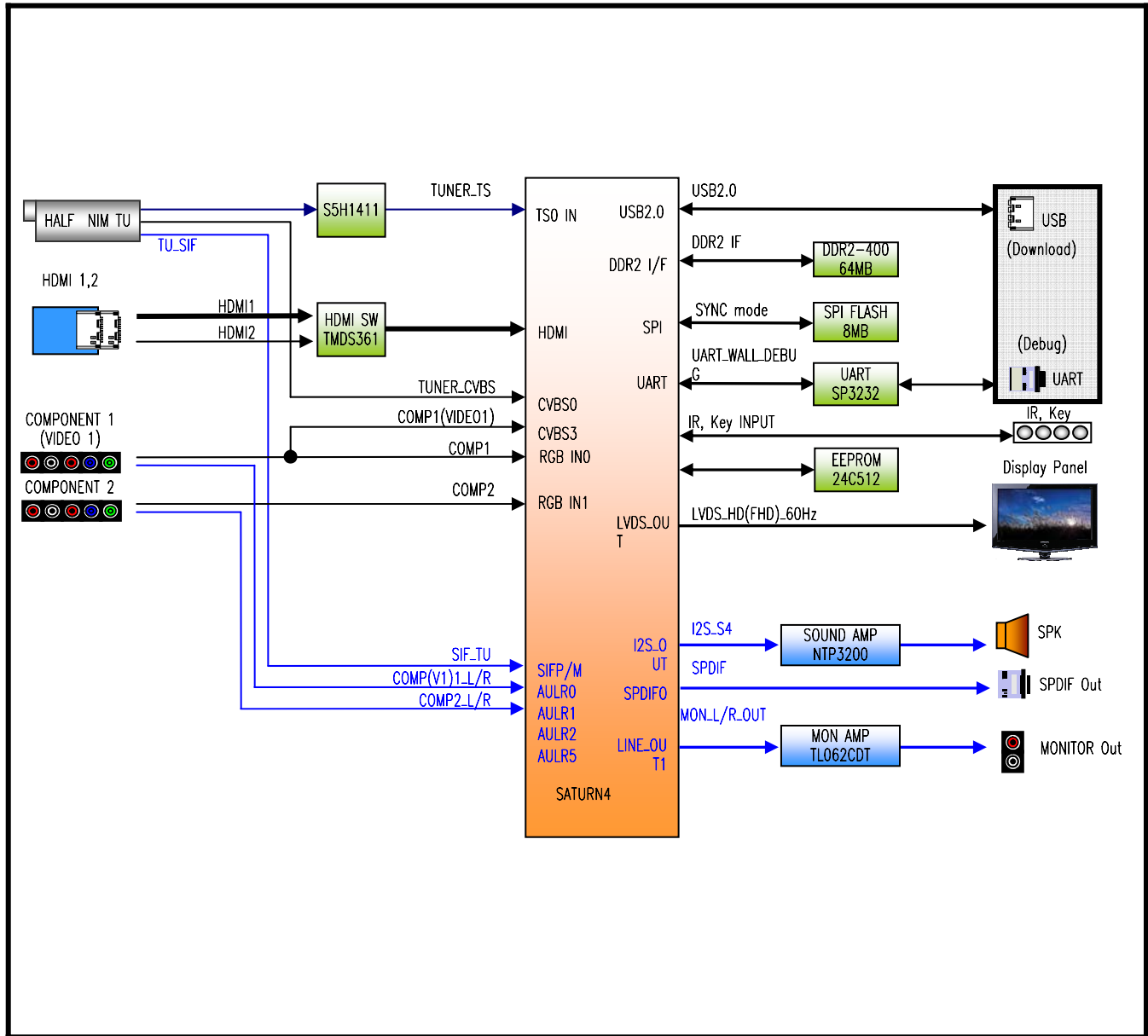
7. Block Diagram

7-1 Wiring Diagram



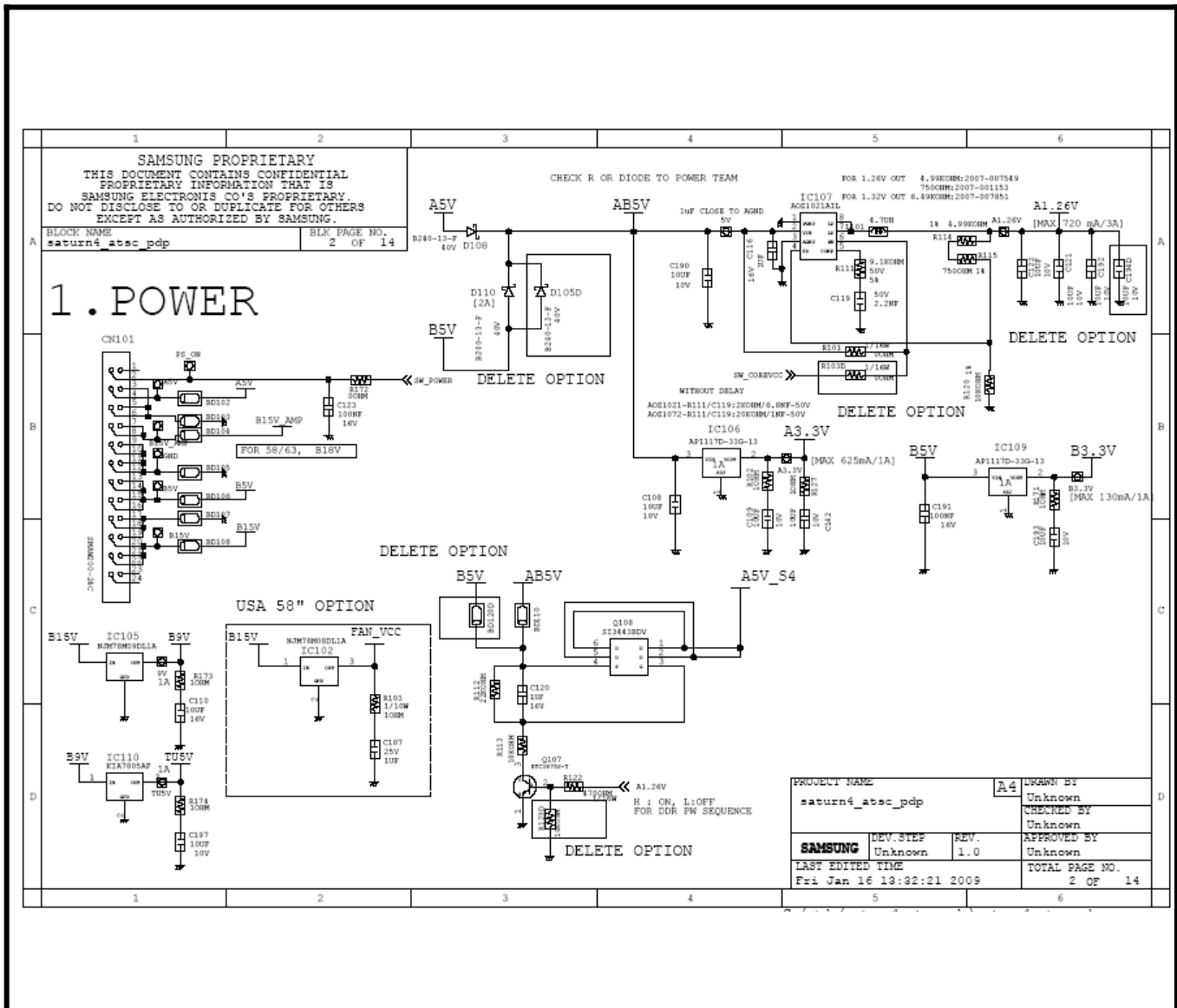
7. Block Diagram

7-3 Main board block diagram

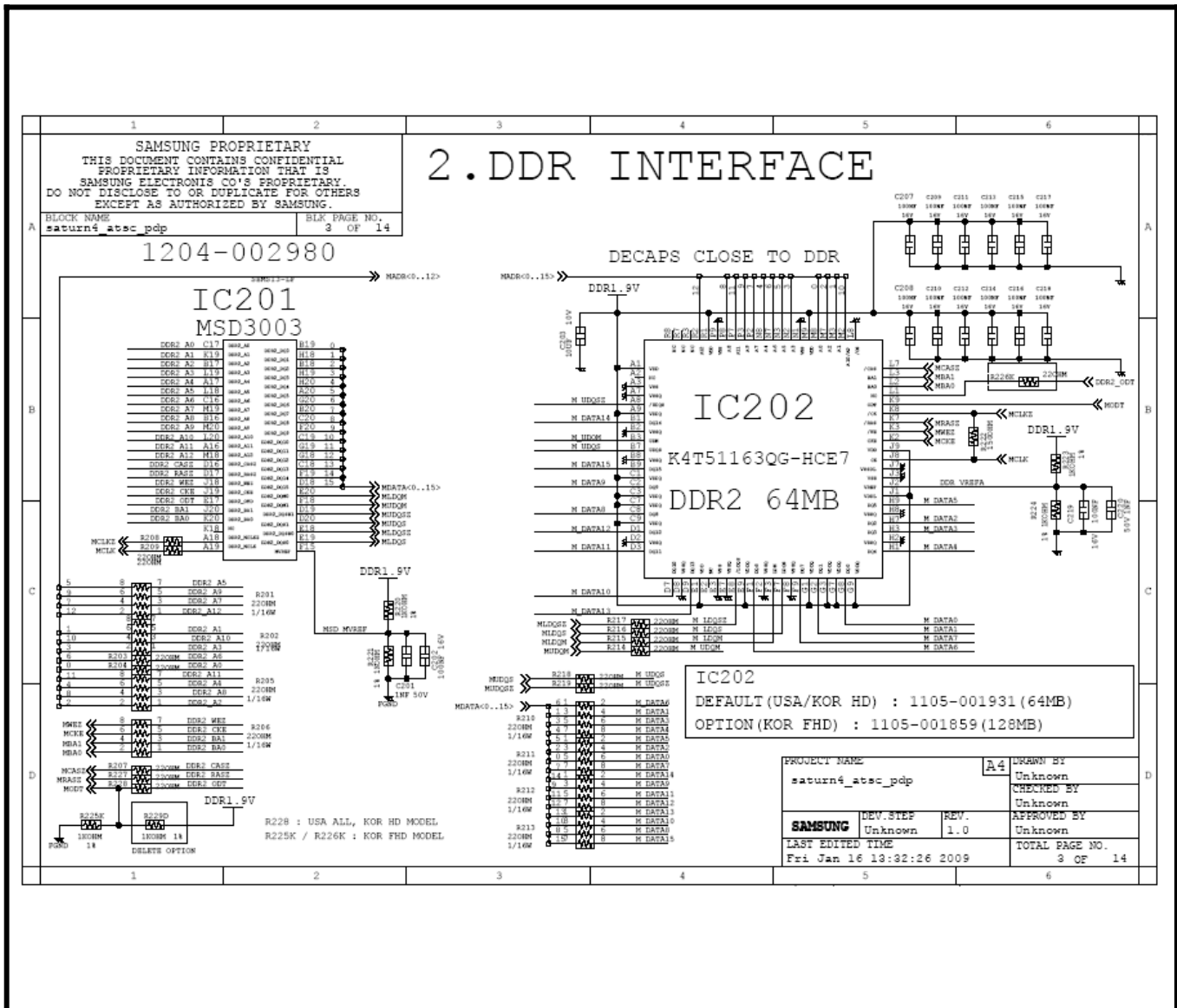


8. Schematic

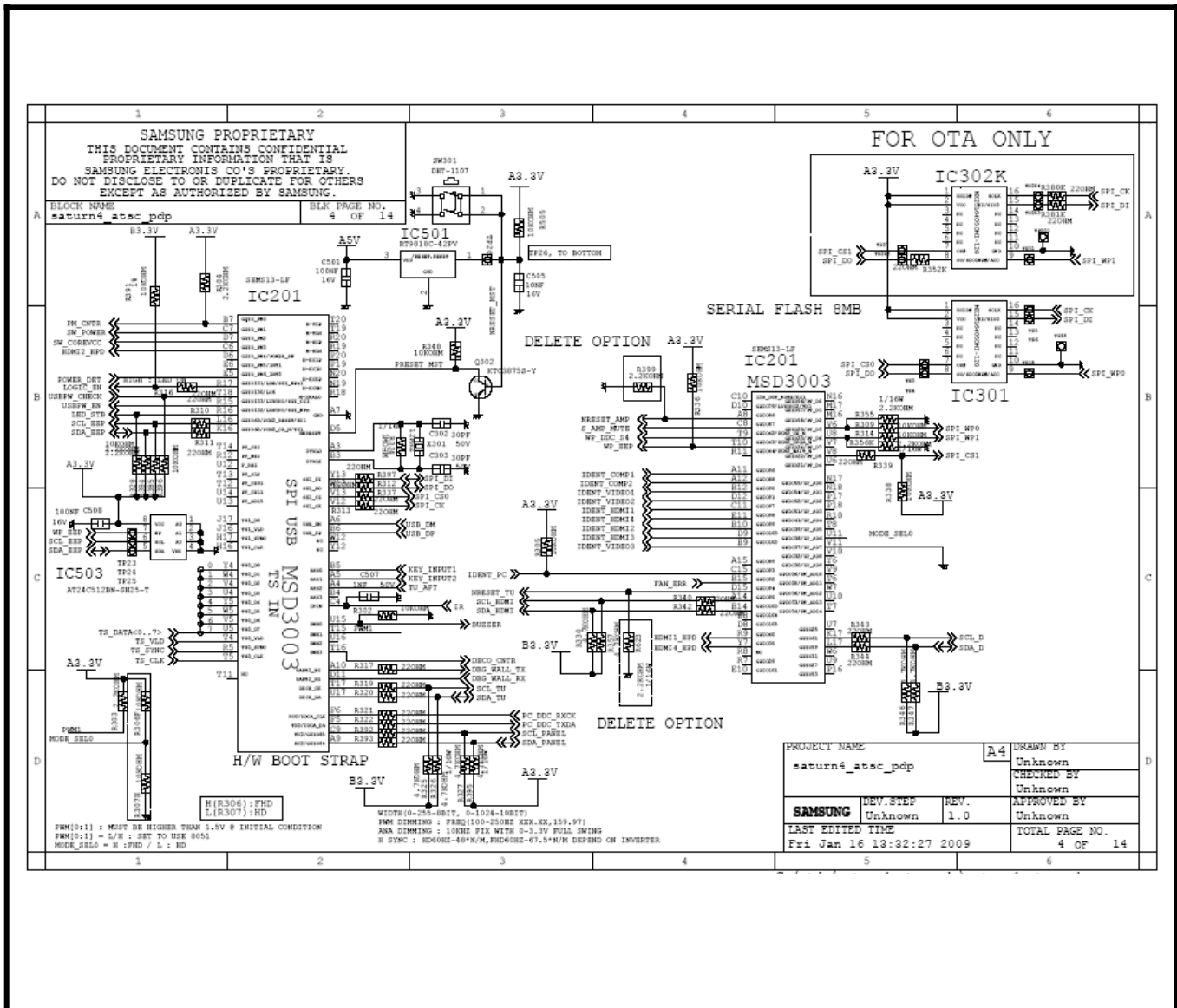
8-1 Power Block



8-2 DDR Block

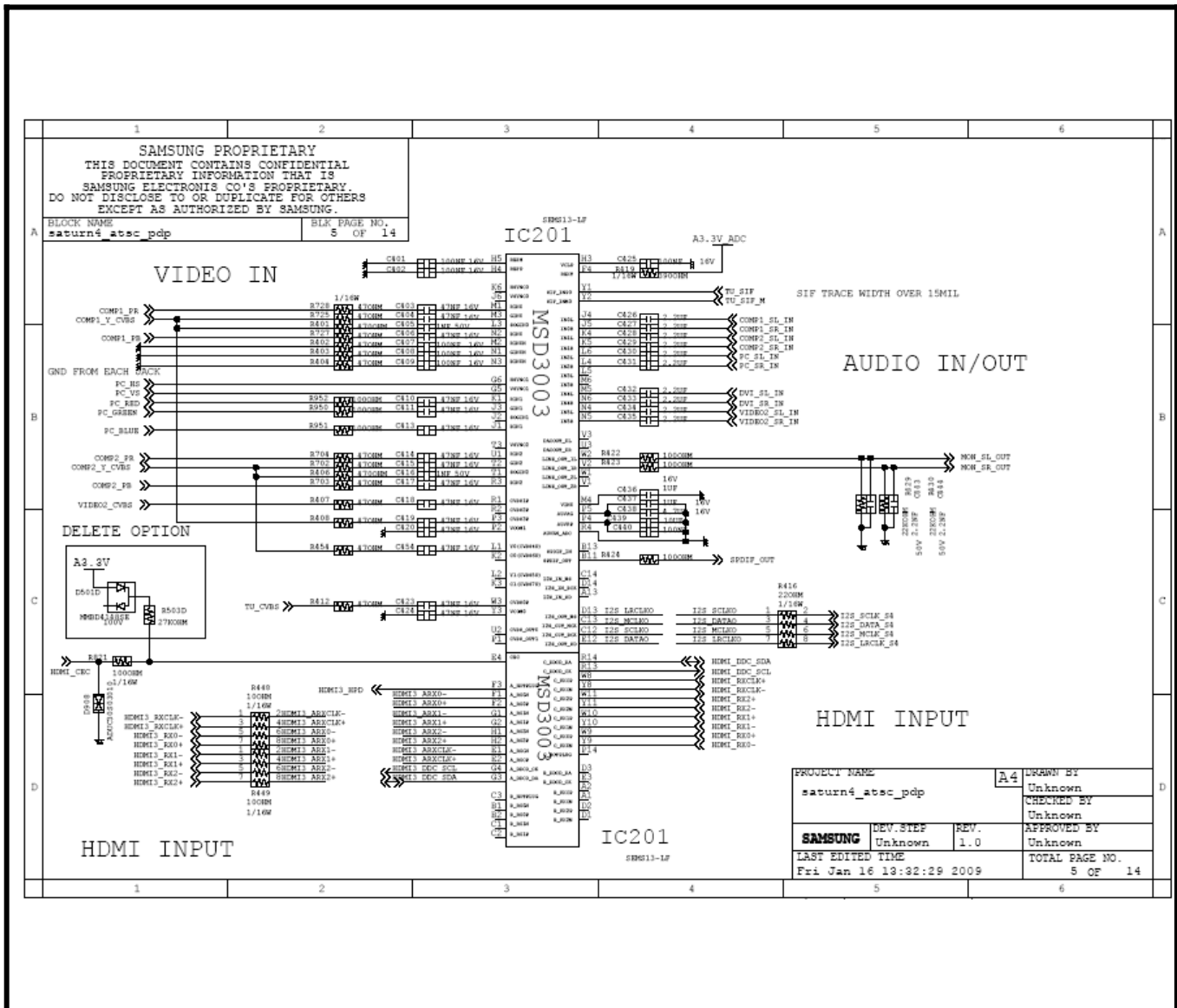


8-3 DNle Block (Main IC), GPIO port



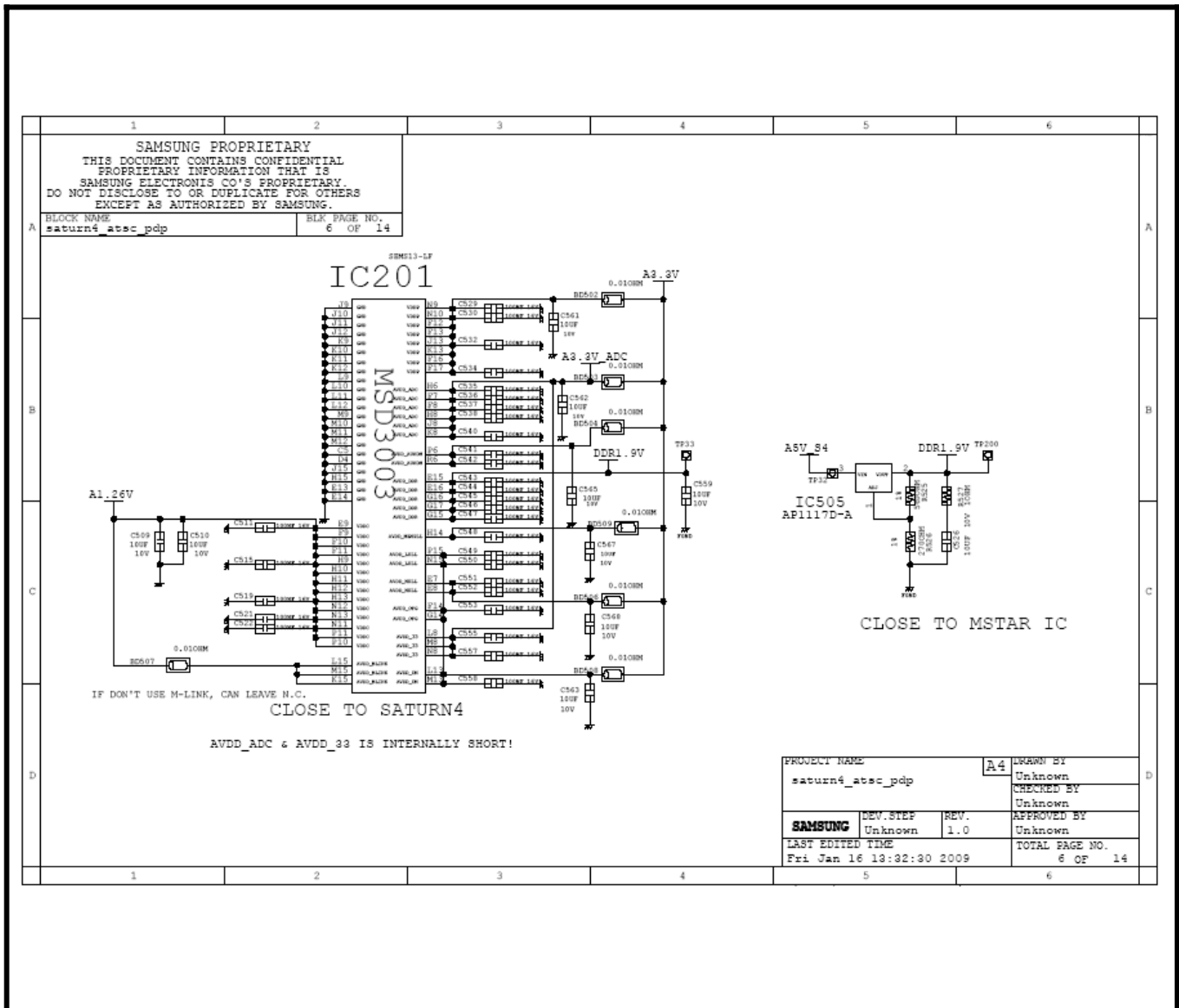
8. Schematic

8-4 DNle Block (Main IC), In/Output interface



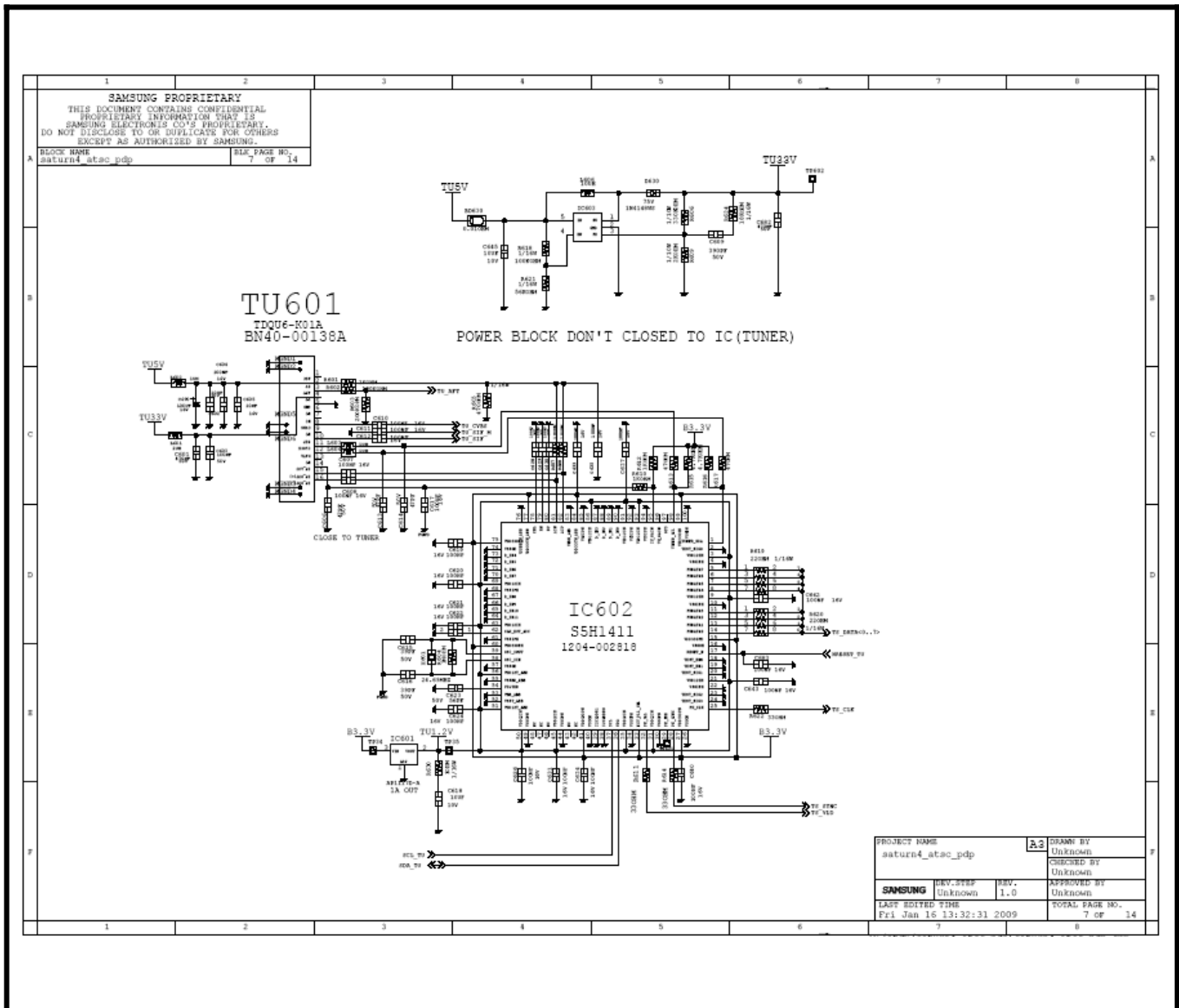
8. Schematic

8-5 DNle Block (Main IC), Power Input

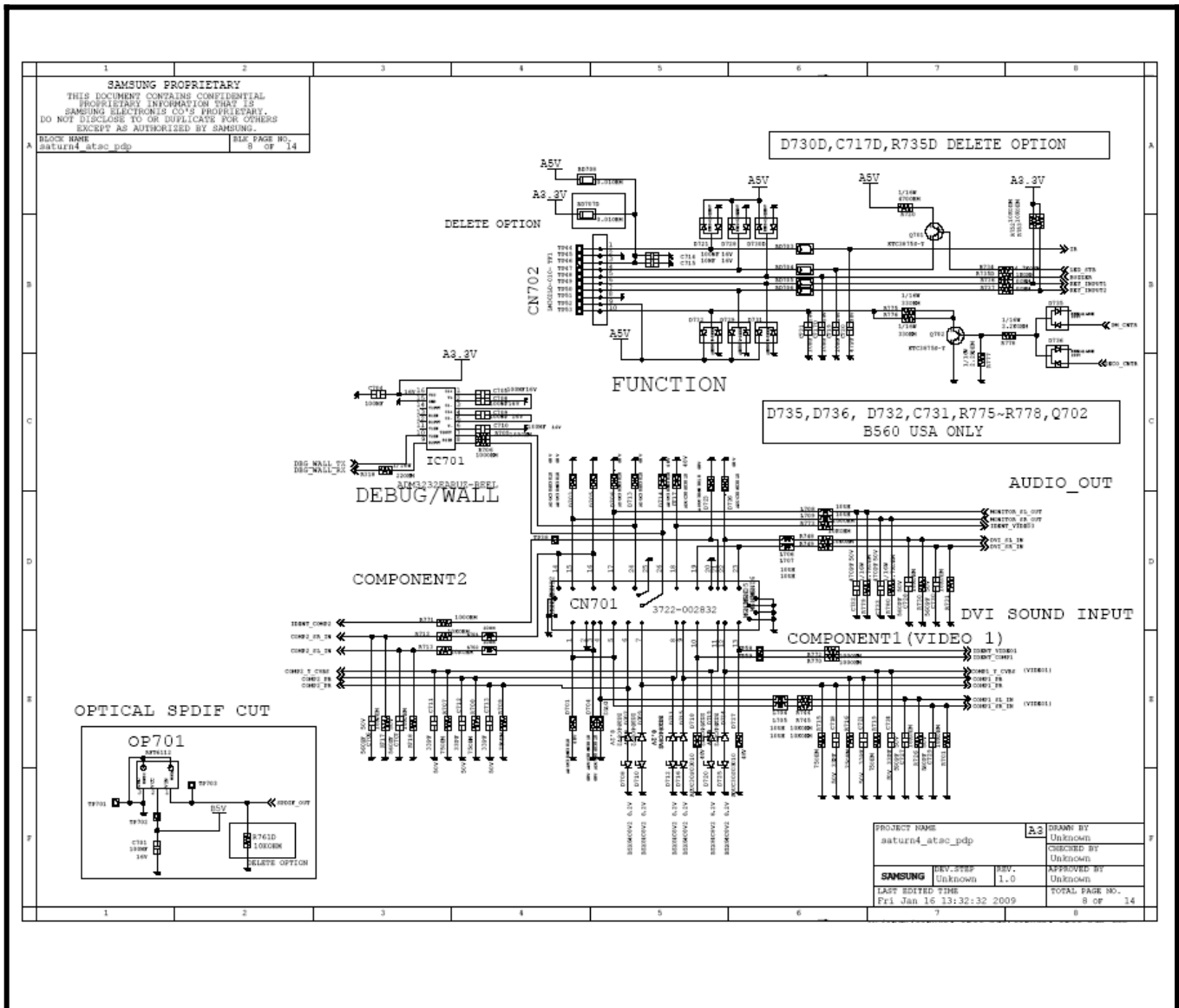


8. Schematic

8-6 Tuner Block

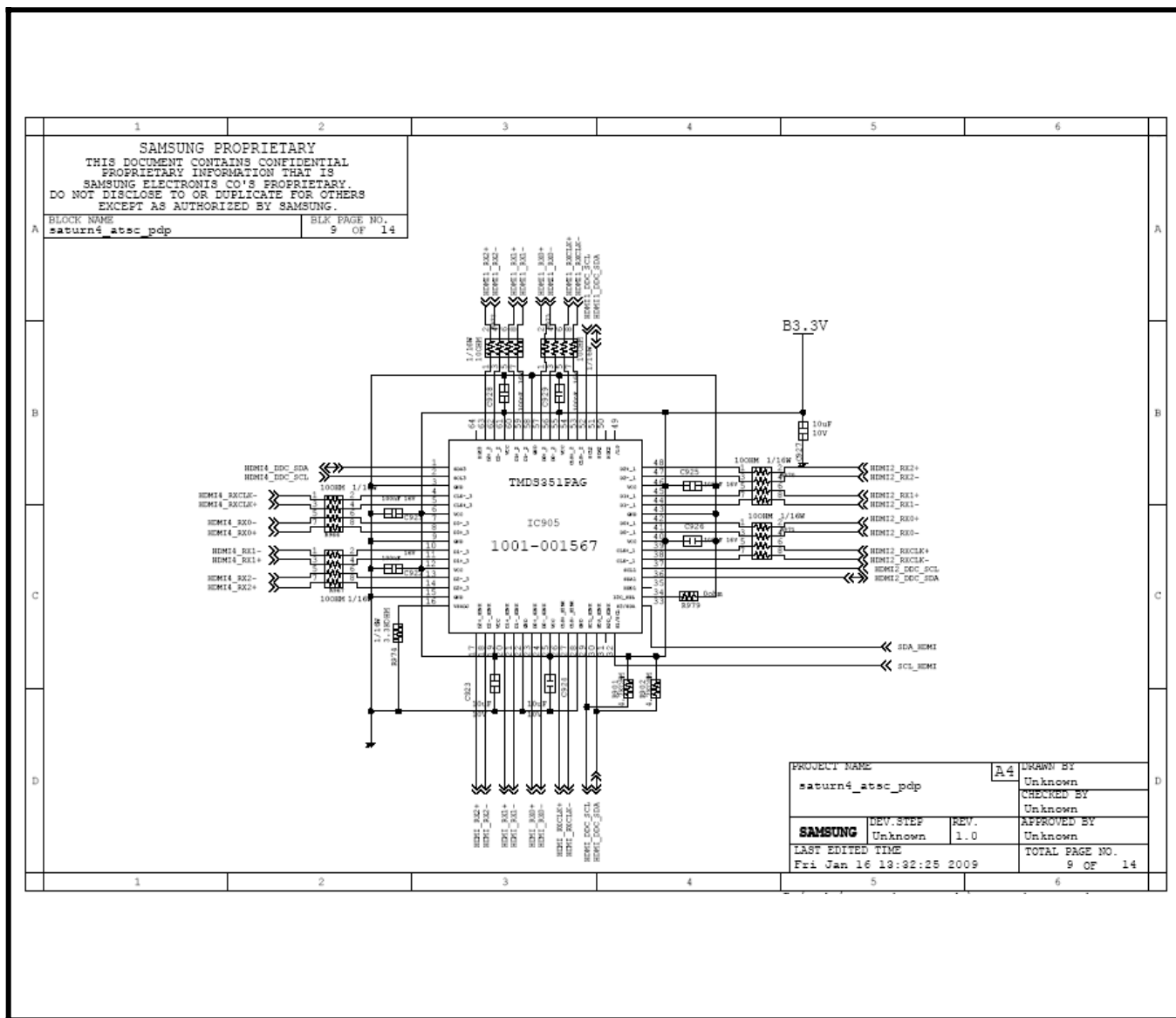


8-7 Input/Output Block



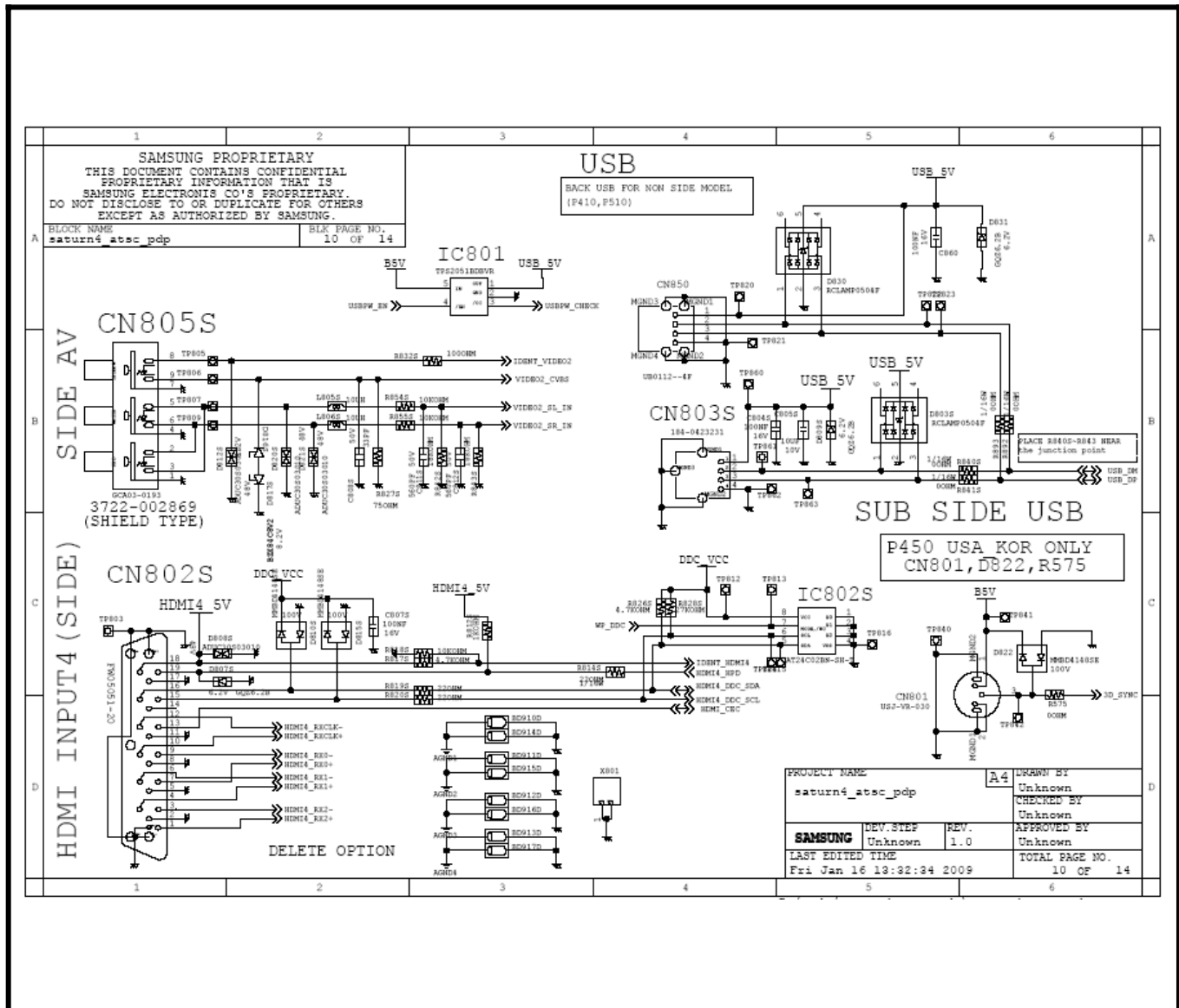
8. Schematic

8-8 HDMI SW Block



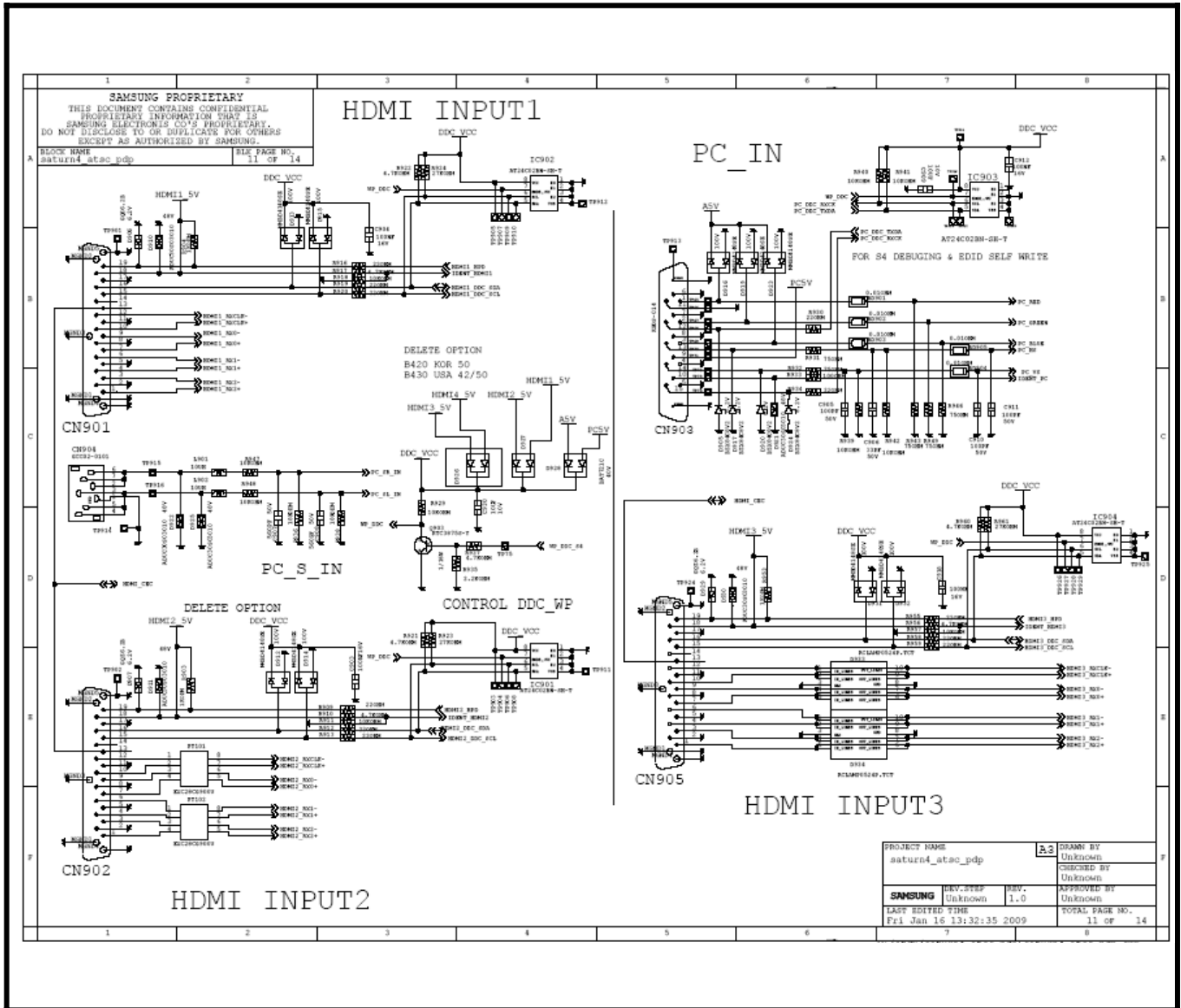
8. Schematic

8-9 USB Block (Side Block is option for high-grade model)



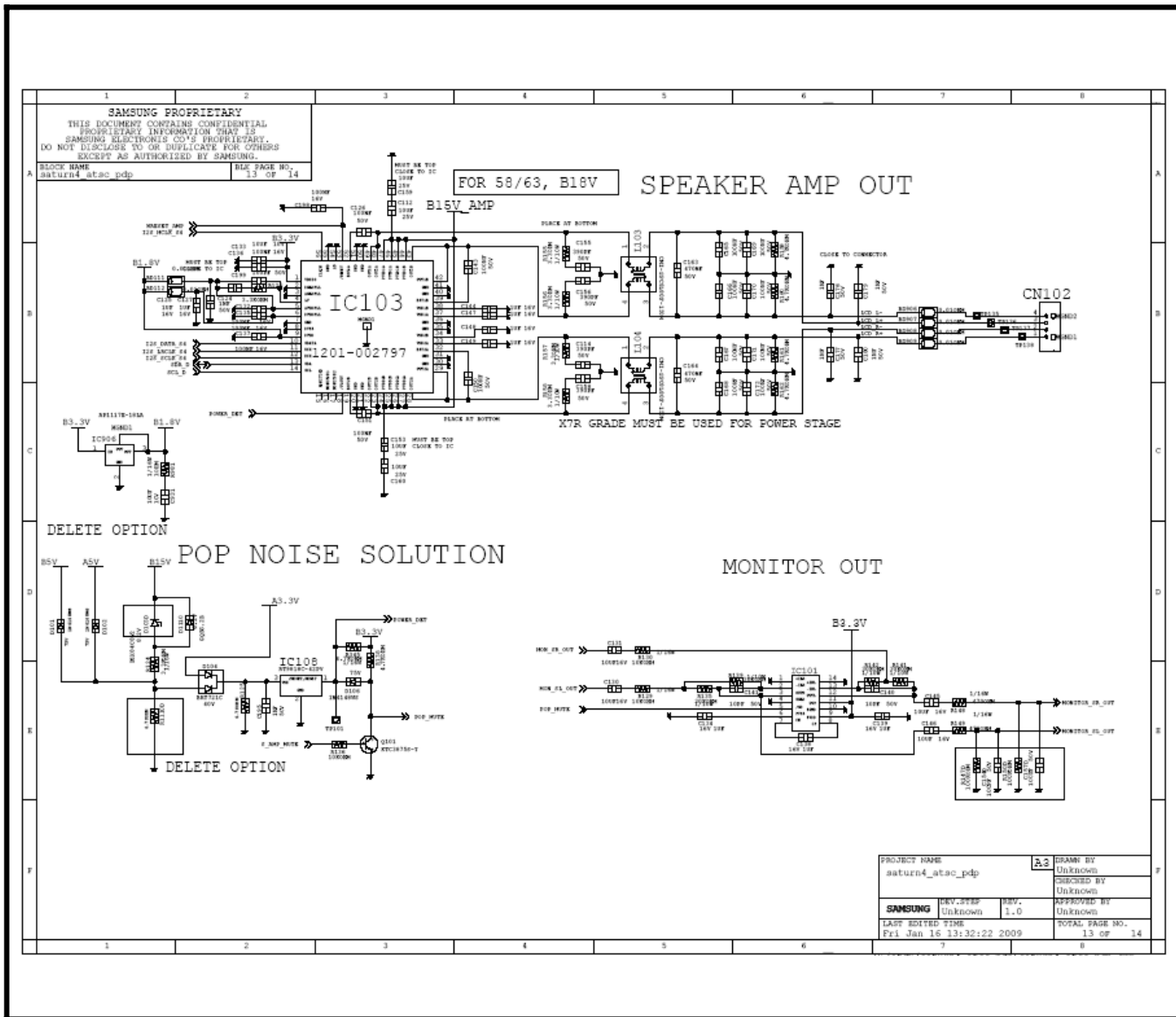
8. Schematic

8-10 HDMI input Block (HDMI3 & PC is option for high-grade model)



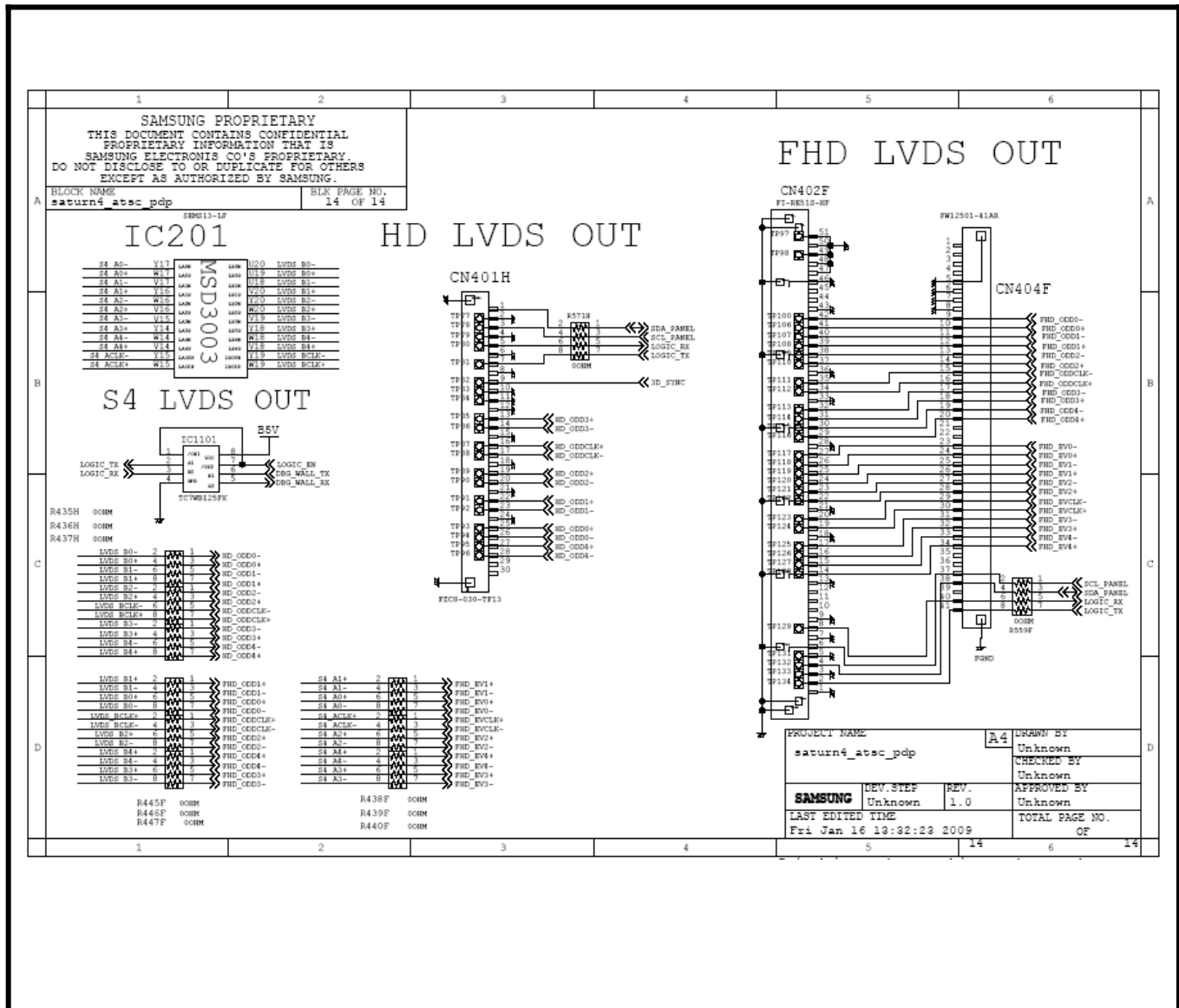
8. Schematic

8-11 Sound Block



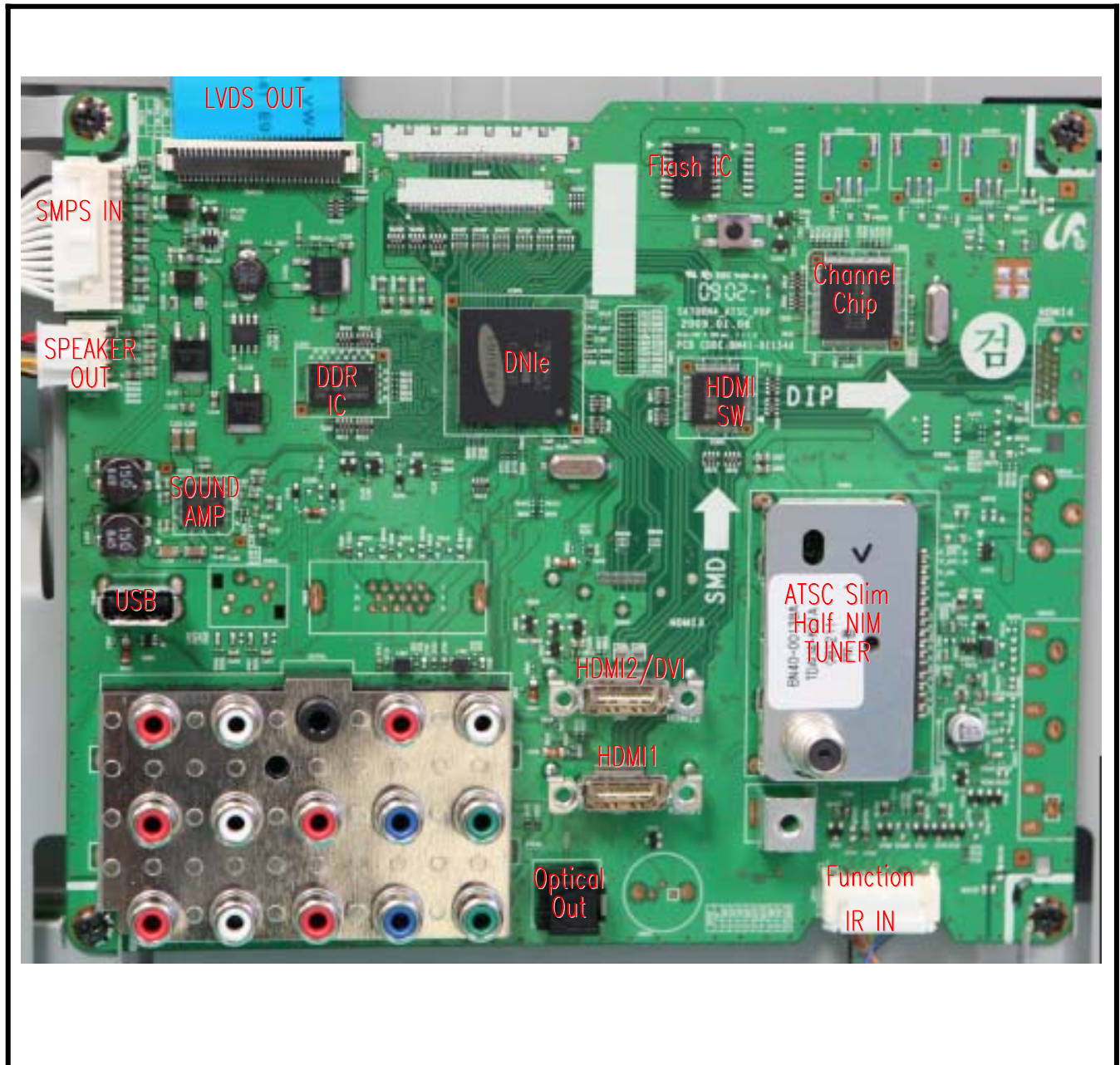
8. Schematic

8-12 LVDS Out Block



9. PCB layout

9-1 PCB layout (NS-P42Q-10A, NS-P501Q-10A)



10. Service BOM

10-1 Model BOM view

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
2	S40-NS-P501Q-10A	BN90-02061A	ASSY COVER FRONT	PB560 42	PC	1
2	S40-NS-P501Q-10A	BN90-02103A	ASSY COVER REAR	PB680 58	PC	1
2	S40-NS-P501Q-10A	BN90-02222A	ASSY STAND	42 INSIGNIA	PC	1
2	S40-NS-P501Q-10A	BN91-03781A	ASSY PDP	NS-P501Q-10A	PC	1
2	S40-NS-P501Q-10A	BN91-03874E	ASSY SHIELD	PB430 50	PC	1
2	S40-NS-P501Q-10A	BN92-04441A	ASSY LABEL	NS-P42Q-10A,INSIGNIA, PB3N	PC	1
2	S40-NS-P501Q-10A	BN92-04526A	ASSY ACCESSORY	NS-P42Q-10A,INSIGNIA, PB3N	PC	1
2	S40-NS-P501Q-10A	BN92-04991A	ASSY BOX	50 INSIGNIA	PC	1
2	S40-NS-P501Q-10A	BN92-04993A	ASSY P/MATERIAL	50 INSIGNIA	PC	1

10. Service BOM

10-2 Front Cover

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
3	BN90-02061A	BN96-11136A	ASSY COVER P-FRONT	50 INSIGNIA	PC	1
4	BN96-11136A	0201-001457	ADHESIVE-AA	BP-111,YEL,35CPS	KG	0.002
4	BN96-11136A	6003-001003	SCREW-TAPTITE	BH,+,B,M4,L12,ZPC(BLK),SWRCH18	PC	1
4	BN96-11136A	6502-001019	CABLE CLAMP	10,ID9.9,T7.1,NYLON6.6,G RAY	PC	3
4	BN96-11136A	AA63-60001U	SPACER-FELT	-,FELT,-,-,BLK,T0.5,-,150X15	PC	1
4	BN96-11136A	BN60-00047A	SPACER-FELT	50Q9,FELT,1105L,BLK,0.35T,10W	PC	1
4	BN96-11136A	BN60-00048A	SPACER-FELT	50Q9,FELT,620L,BLK,0.35T,10W	PC	2
4	BN96-11136A	BN63-02183F	COVER-SHEET	Vinyl,T0.05,900mm,200M,HB,HANBO,3M,deawon,C	M	1.55
4	BN96-11136A	BN63-04755B	COVER-SHEET	AMBER,PE,T0.05,W200mm,200M,600FE,CLEAR,TAPE SHEET	M	4.6
4	BN96-11136A	BN63-05695A	COVER-FRONT	INSIGNIA,ABS+PMMA,HB	PC	1
4	BN96-11136A	BN63-05714A	COVER-SHEET	INSIGNIA50",PS Sheet,T0.7,HB,Black	PC	1
4	BN96-11136A	BN64-00588A	WINDOW-RMC	32,BORDEAUX PLUS,PC,-,-,HB,VIOLET,-	PC	1
4	BN96-11136A	BN96-06689A	ASSY BRACKET P-SUPPORT FILTER BOT	Spinel 50",SECC,T0.8	PC	1
5	BN96-06689A	0201-001457	ADHESIVE-AA	BP-111,YEL,35CPS	KG	0.002
5	BN96-06689A	0203-001131	TAPE-DOUBLE FACE	#706BH,T1.1,W12,L20,BLK,-	M	1.16
5	BN96-06689A	BN61-03741A	BRACKET-FILTER SUPPORT BOT	450 , 50",SECC,T0.8	PC	1
4	BN96-11136A	BN96-10706C	ASSY BOARD P-TOUCH FUNCTION&IR	PS50B430P2M,SJ08-01-070C,SUNGJI,Basic PBA	PC	1

10. Service BOM

10-3 Rear Cover

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
3	BN90-02103A	BN96-10624F	ASSY COVER P-REAR	PB430 50,PCM T0.5,BKM-P703	PC	1
4	BN96-10624F	BN63-04504A	FELT	P450 50,FELT,0.5,15,445	PC	2
4	BN96-10624F	BN63-05414P	COVER-REAR	50,PCM,T0.5,BKM-P703	PC	1
4	BN96-10624F	BN64-01010J	INLAY- TERMINAL	B430 42/50,PS SHEET,T0.3,SEA	PC	1
4	BN96-10624F	BN65-00003A	CLAMPER BAG	42C7,LDPE,HB,BLK	PC	1

10. Service BOM

10-4 Base

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
3	BN90-02222A	BN96-11137A	ASSY STAND P-BASE	42 INSIGNIA	PC	1
4	BN96-11137A	BN61-05434A	GUIDE-STAND	INSIGNIA42/50,PC+GF20%,Black	PC	1
4	BN96-11137A	BN63-05715A	COVER-STAND	INSIGNIA42/50,ABS+PMMA,HB,Black	PC	1
4	BN96-11137A	BN73-00052B	RUBBER-FOOT	42Q9,c9,CR Rubber Gray,T3.0 ,DIA 19.0	PC	10

10. Service BOM

10-5 PDP Module

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
3	BN91-03781A	BN96-09789A	ASSY PDP MODULE P	S50HW- YB04,PL50HB004A,50 U1P,U1 PLUS,1365*768,P4 LINE,M1	PC	1
4	BN96-09789A	BN96-09736A	ASSY PDP P-X- MAIN BOARD	S50HW- YB04,PL50HB004A,50 U1P,U1 PLUS,X-Main Board,LJ92-01600A	PC	1
4	BN96-09789A	BN96-09737A	ASSY PDP P-X- MAIN BUFFER BOARD	S50HW- YB04,PL50HB004A,50 U1P,U1 PLUS,X-Main buffer Board,LJ92- 01620A	PC	1
4	BN96-09789A	BN96-09738A	ASSY PDP P-Y- MAIN BOARD	S50HW- YB04,PL50HB004A,50 U1P,U1 PLUS,Y-Main Board,LJ92-01601A	PC	1
4	BN96-09789A	BN96-09739A	ASSY PDP P- LOGIC MAIN BOARD	S50HW- YB04,PL50HB004A,50 U1P,U1 PLUS,Logic Main board,LJ92- 01617A	PC	1
4	BN96-09789A	BN96-09740A	ASSY PDP P- ADDRESS E- BUFFER BOARD	S50HW- YB04,PL50HB004A,50 U1P,U1 PLUS,ADDRESS E- BUFFER BOARD,LJ92-01625A	PC	1
4	BN96-09789A	BN96-09741A	ASSY PDP P- ADDRESS F- BUFFER BOARD	S50HW- YB04,PL50HB004A,50 U1P,U1 PLUS,ADDRESS F- BUFFER BOARD,LJ92-01626A	PC	1

10. Service BOM

10-6 Screws

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
3	BN91-03781A	BN96-09789A	ASSY PDP MODULE P	S50HW- YB04,PL50HB004A,50U1 P,U1 PLUS,1365*768,P4 LINE,M1	PC	1
4	BN96-09789A	BN96-09736A	ASSY PDP P-X- MAIN BOARD	S50HW- YB04,PL50HB004A,50U1 P,U1 PLUS,X-Main Board,LJ92-01600A	PC	1
4	BN96-09789A	BN96-09737A	ASSY PDP P-X- MAIN BUFFER BOARD	S50HW- YB04,PL50HB004A,50U1 P,U1 PLUS,X-Main buffer Board,LJ92-01620A	PC	1
4	BN96-09789A	BN96-09738A	ASSY PDP P-Y- MAIN BOARD	S50HW- YB04,PL50HB004A,50U1 P,U1 PLUS,Y-Main Board,LJ92-01601A	PC	1
4	BN96-09789A	BN96-09739A	ASSY PDP P- LOGIC MAIN BOARD	S50HW- YB04,PL50HB004A,50U1 P,U1 PLUS,Logic Main board,LJ92-01617A	PC	1
4	BN96-09789A	BN96-09740A	ASSY PDP P- ADDRESS E- BUFFER BOARD	S50HW- YB04,PL50HB004A,50U1 P,U1 PLUS,ADDRESS E- BUFFER BOARD,LJ92- 01625A	PC	1
4	BN96-09789A	BN96-09741A	ASSY PDP P- ADDRESS F- BUFFER BOARD	S50HW- YB04,PL50HB004A,50U1 P,U1 PLUS,ADDRESS F- BUFFER BOARD,LJ92- 01626A	PC	1

10. Service BOM

10-7 Bracket-1

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
3	BN91-03874E	BN96-10789A	ASSY BRACKET P-FILTER TOP	PB550 50,SECC,T0.8	PC	1
4	BN96-10789A	BN61-03736B	BRACKET-FILTER TOP	SECC,450 , 50",T0.8	PC	1
4	BN96-10789A	BN63-05765C	GASKET-EMI	50INCH,AI,2.5,20,1117 ,SILVER,45Kg,PDP	PC	1
4	BN96-10789A	BN72-00437A	SPONGE	50Q9,SPONGE,5T,6W, 1117L,32K	PC	1
3	BN91-03874E	BN96-10544A	ASSY BRACKET P-FILTER SIDE	PB550 50,SECC,T0.8	PC	2
4	BN96-10544A	BN61-05048A	BRACKET-FILTER SIDE	50PB650,SECC,T0.8	PC	1
4	BN96-10544A	BN63-05765D	GASKET-EMI	50INCH,AI,2.5,20,645, SILVER,45Kg,PDP	PC	2
4	BN96-10544A	BN72-00438A	SPONGE	50Q9,SPONGE,5T,6W, 648L,32K	PC	1
3	BN91-03874E	BN96-10238A	ASSY BRACKET P-WALL BOTTOM	PB450 50,SECC T1.2	PC	2
4	BN96-10238A	BN61-04881A	BRACKET-WALL BOTTOM	50PB550,SECC,T1.2	PC	1
4	BN96-10238A	BN61-04900A	HOLDER-WALL BOTTOM	42PB450,ABS HB,BLK	PC	1
4	BN96-10238A	BN72-00456A	SPONGE	PB450,SPONGE,20,40 ,70	PC	1
3	BN91-03874E	BN96-10234B	ASSY BRACKET P-FILTER BOTTOM	PB450 50,SECC,T0.8	PC	1
4	BN96-10234B	AA63-60001E	SPACER-FELT	-,FELT,-,-,-,BLK,0.5,- ,55X15	PC	2
4	BN96-10234B	BN61-04878B	BRACKET-FILTER BOTTOM	50PB550,SECC,T0.8	PC	1
4	BN96-10234B	BN63-05928A	GASKET-EMI	50INCH,Conductive Fabric,5,20,1117,GRAY,32Kg,PDP	PC	1

10. Service BOM

10-7 Bracket-2

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
4	BN96-10234B	BN72-00437A	SPONGE	50Q9,SPONGE,5T,6W,11 17L,32K	PC	1
4	BN96-10234B	BP60-00015A	SPACER-FELT	617W,FELT,L600,T0.5,W 30	PC	2
3	BN91-03874E	BN96-10232B	ASSY BRACKET P-PCB	PB450 50,SECC,T0.6	PC	1
4	BN96-10232B	AA60-00171T	SPACER-FELT	56L7,FELT,50,T0.5,8	PC	2
4	BN96-10232B	AA63-00141A	SPACER-FELT	42P2S,FELT,L110,T0.5,D 20	PC	3
4	BN96-10232B	AA63-60002C	SPACER-FELT	-,FELT,-,-,BLK,T0.5,- ,200X20	PC	1
4	BN96-10232B	BN61-04885B	BRACKET-PCB	PB450 50,SECC,T0.6	PC	1
3	BN91-03874E	BN96-10231C	ASSY BRACKET P-SUPPORT STAND	PB450 42,SECC,T2.0	PC	1
4	BN96-10231C	AA63-00141A	SPACER-FELT	42P2S,FELT,L110,T0.5,D 20	PC	1
4	BN96-10231C	AA63-01109H	GASKET-EMI	42D5,T1.5,10,70,Fabric	PC	1
4	BN96-10231C	AA63-60001E	SPACER-FELT	-,FELT,-,-,BLK,0.5,- ,55X15	PC	2
4	BN96-10231C	BN61-04884C	BRACKET- SUPPORT STAND	42PB550,SECC,T2.0	PC	1
4	BN96-10231C	BN63-01151D	FELT-NON WOVEN	SP20UO,FELT,T0.5,10,9 0	PC	4
4	BN96-10231C	BN63-05770A	SHEET- INSULATOR	PB450- 42",PC,0.254,36.0,62.0,B LACK	PC	2

10. Service BOM

10-8 Accessory

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
3	BN92-04526A	BN96-10224A	ASSY ACCESSORY	PS42B455B1WXXE	PC	1
4	BN96-10224A	4301-000103	BATTERY-ALKALINE	1.5V,750mAH,AAA[LR03],10.5x44.5mm	PC	2
4	BN96-10224A	6902-000110	BAG PE	LDPE,T0.05,W250,L400,TRP,28,2,-,9.200g	PC	1
4	BN96-10224A	BN59-00892A	REMOCON	INSIGNIA,TM85,20Pin,37,OEM	PC	1
4	BN96-10224A	BN63-01798B	CLOTH-CLEAN	cloth,180,200,sea blue,ToC	PC	1
4	BN96-10224A	BN63-05671A	COVER-BOTTOM	50PB550,HIPS,HB,BLK(BK500)	PC	1
4	BN96-10224A	BN68-00513A	LABEL-E,PASS	ALL MODEL,YUPO(110G),50X15,BLACK,WHITE	PC	1
4	BN96-10224A	BN83-01481A	CKD-POWER CORD	NS-P502Q-10A	PC	1
4	BN96-10224A	BN96-05261D	ASSY ACCESSORY	09 PDPTV	PC	1
5	BN96-05261D	6003-001729	SCREW-TAPTITE	PH,+,WSP,S-TITE,M4,L38,ZPC(BLK)	PC	4
5	BN96-05261D	6902-000336	BAG ZIPPER	LDPE,T0.05,W70,L80,TRP,-,-,-,0.500g	PC	1
4	BN96-10224A	BN96-10276A	ASSY HOLDER P-RING	09 PDPTV ALL MODEL,ABS HB,GRAY	PC	1
5	BN96-10276A	6902-000683	BAG ZIPPER	LDPE,T0.05,W60,L60,TRP,-,-,4-PE MARK,0.330g	PC	1
5	BN96-10276A	BN61-05283A	HOLDER-RING	ABS, HB,BLACK	PC	4
3	BN92-04526A	BN96-10131A	ASSY ACCESSORY-MANUAL	NS-P42Q-10A,INSIGNIA,PB3N	PC	1
4	BN96-10131A	6902-000110	BAG PE	LDPE,T0.05,W250,L400,TRP,28,2,-,9.200g	PC	1
4	BN96-10131A	BN68-00513A	LABEL-E,PASS	YUPO(110G),50X15,BLACK,WHITE	PC	1
4	BN96-10131A	BN68-02133A	MANUAL USERS-IB	comm,Insignia,3Langs,N.America,W/P80g,A4	PC	1

10. Service BOM

10-9 Packing

Level	Parent Code	Child Code	Part DESC.	SPEC	UNIT	Q'ty
3	BN92-04991A	BN69-03503A	BOX-01,SET IN	50PB550,CB,C-01,DW1(DY-01),ECT 50,YEL,W1797,D609,897g	PC	1
3	BN92-04991A	BN69-03730A	BOX-SET,OUT	INSIGNIA 50,CB,C-03,DW3,YEL,W1503,D275,H852,3674g	PC	1
3	BN92-04993A	6902-000061	BAG AIR	LDPE,T0.2,W500,L1000,TRP,-,-,-,370.000g	PC	0.059
3	BN92-04993A	6902-000379	BAG AIR	LDPE,T0.2,W1000,L1800,TRP,-,-,-,1260.000g	PC	0.017
3	BN92-04993A	6902-001042	BAG PE	HDPE/NITRON,T0.015/T0.5,W1500,L1000,TRP,28,2,DOUBLE,40g	PC	1
3	BN92-04993A	AA61-20285C	HOLDER-BOX	CORAL,PP,BLACK,HB,17.5g	PC	4
3	BN92-04993A	BN69-03617A	CUSHION-SET	INSIGNIA 50",EPS,.g	PC	1
3	BN92-04993A	BN74-00008A	TAPE-OPP MASKING	OPP-2,T0.05,W100,L800M,C LR	M	1.66